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"Scire est nescire, nisi id me
Scire alius sciret."

SPRING, 1933.

A SURGICAL ADVENTURE: AN AUTOBIOGRAPHICAL SKETCH.

The Presidential Address, delivered on 12th October, 1932, at the opening of the Sixtieth Session of the Bristol Medico-Chirurgical Society.

BY

ERNEST W. HEY GROVES, M.S., F.R.C.S.,

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EVERY year a new man occupies the Presidential Chair, and every year he has to cudgel his brains to find new matter for a Presidential Address.

Many, in the endeavour to lead their hearers into new realms, have been tempted to plunge into unfathomable depths, or mount into the rarefied air of the stratosphere; but though I envy their audacity, I have neither the knowledge nor the courage to follow their example. I propose to stick strictly to earth, and to discuss some of the problems of medical practice as they have actually occurred in my own life.

Life must always be somewhat of an adventure, the mysterious reaction of the personality to his environment. This is particularly true of the medical profession, because the environment includes every kind of human being to be met, every kind of disease to be combated, and an ever-changing and increasing equipment of knowledge and experience with which to heal the sick bodies and the sad minds of our fellows. The many varieties of human beings and the manifold diseases have been the same since the earliest ages when the medicine-man set out on his adventure to heal his fellows, but the bounds of knowledge and the equipment of science have increased so much during the last century and last generation that the adventure has become more difficult and yet more interesting.

Perhaps a more modest form of address would be to attempt to review the progress of surgical science during the past thirty years. But then I could hardly avoid wearying you by the hackneyed nature of my subject. I am going to risk your condemnation for egotism in order that I may give a personal and intimate note to my remarks.

The opening adventure.—The first adventure of the profession is entering upon it. I suppose most men do this deliberately, after grave consultation with parents or teachers. It had been intended that I should go to India, the place of my birth, to follow my father's profession of engineering. It was the mere chance of seeing an advertisement of a scholarship at St. Bartholomew's Hospital, which included the exact subjects which I was taking in my Science Degree, which turned me into the path of the medical profession. I entered for this scholarship without consulting anybody—"just for a lark"—and when I

was successful it seemed fairly obvious that I ought to become a doctor.

My recollection of the five years of student life at Bart's is one of strenuous toil, rendered necessary by the fact that I had to earn my maintenance by teaching biology at the same time that I carried on my studies. I suppose it was this rather sordid struggle for existence which made me long for an independent position in which I might, to some extent, be my own master. At any rate, at that time I entertained no soaring ambitions, and only hastened to acquire the right to practise. Hence I was content to hold only one resident appointment, that of House Surgeon to the Obstetric and Gynæcological Department, working under Sir Francis Champneys, Dr. Griffith, and Mr. Harrison Cripps. For the same reason I was satisfied with the Conjoint Diploma, though fortunately in my routine work I had taken the Intermediate Examination of the London M.B., B.S., and the Primary Fellowship.

I can only recall one event of my student days which was at all adventurous. I had saved a little money, and as the result of a sudden impulse I went with a friend, F. A. Smith (now a Colonel in the I.M.S.), to Germany, as a student of Physiology at the University of Tübingen for one term. At the moment it seemed rather like waste of time and money, but I never regretted it in after years, because it gave me a groundwork in the German language, which has been invaluable to me since.

I am sure that it would be of great advantage to all students if for some period in their career they could go to a foreign University. It ought to be planned as part of the curriculum, and the time so spent counted as part of the present six years' course.

The second step.—Almost as important as the entry into the medical profession is embarking upon a career when legal qualification has been obtained. I am afraid I had only two guiding motives at this time: one was to earn my living, and the other to get into the country as the ideal contrast to the city life of London, which had been my lot for five and a half years. It required two years in the profound calm of Somerset air in Chewton Mendip to make me realize that I had only drifted into a backwater, and that it behoved me to get out once more into the active stream of life.

Country practice thirty years ago was a much more isolated existence than it is to-day. The radius covered by a horse or bicycle was not great, visitors were rare, and the only outdoor recreations those of riding a horse or planting a garden. Ample spare time enabled me to complete the M.B., B.S., and to obtain the M.D. degrees, although this was done much more as a pastime than with any ambitious idea of taking a higher status in the profession.

From the peaceful idleness of Chewton Mendip I went to that unkempt, industrial wilderness, Kingswood, where bootmakers, market gardeners, chapels and public houses struggle for existence. Certainly nothing seemed more unlikely than that such surroundings should give the opportunity and the incentive for entering upon a surgical career. Those were the days before National Health Insurance. The backbone of the practice consisted of a degrading form of contract work, known as "clubs," in which patients paid 4s. a year, children being half-price. The money was often collected by a tout, who himself drew a commission!

But there were two good things—plenty of work and interesting cases. It was the latter which, from a professional point of view, "saved my soul." Two of these cases stand out clearly in my mind as being among the first which brought me back into contact with the scientific medical world.

One was a patient with puerperal eclampsia. It occurred to me that the poison-laden circulation might be relieved by the transfusion of saline solution into the veins. This was carried out successfully in a poor cottage, with no assistance but that of a country midwife, and then I had the audacity to write up the case and urge this as a new method before such an august audience as that of the Obstetrical Society in London! But it was the beginning of that happy association with the leaders of the profession in Town which has continued and increased ever since.

The other case led to a much more daring adventure. It was that of a lady who had pain in the back, and who had been treated for more than a year by a physician in Clifton for "lumbago." She was bedridden, and from her couch used to watch the "new doctor," as I was then, go to his daily visit to his surgery at Hanham. Some feminine whim—or shall I call it intuition?—made her decide to call me in, and I found that she had an ovarian tumour impacted in her pelvis. She was so pleased at the discovery of a definite cause of her pain that nothing would satisfy her but that the doctor who had discovered it should also remove it!

For the moment this seemed to me unthinkable. I had no hospital or nursing home, or even the necessary instruments. But the lady insisted, and I was young and venturesome, and I felt that technically I was

quite equal to the task. So, hastily, I improvised a room in my own house. My wife, who had been a nurse at Bart's, undertook to look after the case and the operation was successfully accomplished.

Naturally such a sudden leap from the sordid drudgery of club practice to the fascination of major surgery turned my thoughts definitely in the direction of operating work. As far as my Kingswood practice was concerned the new work added an untold zest to life, but it had a very dubious effect on my financial prospects. The fees paid were quite inadequate to compensate for the suspicions engendered in the minds of the public by my irregular and unusual conduct.

Gynæcological operations I had been accustomed to, of course, but the first time I ever took part in the removal of the appendix, the gall-bladder or prostate, or the performance of gastro-enterostomy was when I performed these operations in my own house, between the years 1898 and 1902.

Such a form of surgical practice cannot be too heartily condemned—in fact, it ought to be made illegal—but I can only plead in my self-defence that in those days all surgeons were doing these operations for the first time and that my irregular conduct was justified by success. I only had two deaths, one a case of tuberculous peritonitis and the other a pancreatitis complicating gall-stones.

I was necessarily brought into association with the consulting staff of the city in the course of my work, and I am greatly indebted to Dr. Freeman and to the late Dr. Michell Clarke, Mr. Richardson Cross, and Dr. Markham Skerritt, who advised me to write up my cases and present them to the Medico-Chirurgical

Society and the British Medical Association. By doing this I became known to the leaders of the profession, so that when an unexpected death vacancy occurred on the Staff of the General Hospital the unprecedented step was taken of appointing a general practitioner from the east end, who had had no previous association with that institution.

At the moment it seemed to me that the occurrence of the vacancy was just one of the " tides in the affairs of men, which taken at the flood, leads on to fortune," and I eagerly set out, little dreaming of the bitter struggle which lay before me in the years to come.

For four years I retained a share in the Kingswood practice, and used to toil out there daily on a pedal cycle for my club work, whilst in the afternoon I was the Consulting Surgeon in charge of out-patients at the Hospital. After this my livelihood was eked out by the help of coaching and by taking resident patients and students, while holidays were provided by doing seaside *locums*. What spare time I had was occupied in getting the Final F.R.C.S. and the London M.S.

Adventures with the pen.—I suppose there is only one more responsible thing than coaching students, and that is examining them, and I have had more than my share of both tasks.

As the period in which I was coaching and that in which I was preparing for the Fellowship coincided, the idea gradually evolved itself in my mind of tabulating my notes, so that a student could quickly look up any subject and get the salient points needed for a written or *viva voce* examination. And this idea gave birth to the *Synopsis of Surgery*, a work which, I venture to think, is not unknown to some of my audience.

The first edition appeared in 1908, and it was with some justice criticized as a dreadful cram book. But I am consoled by thinking that it has been a help to many thousands of students—and I have even heard complimentary remarks about it. The librarian at the University assures me it is the most stolen book which he stocks. I have just finished writing the tenth edition of the book, and whether it has been of service to anyone else, it has been of great value to me, because it gives me the opportunity every two years of revising the subject and of deciding how much of the old matter can go out and how much of new teaching is sufficiently established to go in. The quite unexpected success of this first adventure with the pen and my increasing contact with leaders of surgical thought set my mind at work on the subject of a surgical periodical.

The attempt to follow the current literature of the day made one conscious of the unpleasant fact that every leading country in Europe and America had its *Journal of Surgery*, whereas this country, the native land of Hunter and Lister, had nothing more than general medical journals. Inquiry about this strange fact showed that at least three times within the past generation an English surgical journal had been started and had then been given up. I was told that, apart from the financial backing of a wealthy society, the thing could not be made to pay, and that no publisher would undertake it; that surgeons would never send work to a new journal, lest such papers should be lost to the world by reason of the publication's speedy disappearance. However, with the incurable optimism of youth I went on, hoping that by a collective effort success might be achieved.

I was most fortunate in being in touch with Mr. Hartland Wright, of John Wright and Sons, who had published my *Synopsis*. Without his advice, encouragement and practical help the *British Journal of Surgery* would never have seen the light of day, or have survived to the mature age of which it now boasts.

Consideration of past failures in surgical journalism showed that these had been due to a want of wide responsible support by leading surgeons. We had to secure the active co-operation of one or more surgeons from every teaching centre in Great Britain, and we had to make sure that the active minds of the provinces should be joined to those in the Metropolis, so as to avoid the dangers of a publication in London, where the rivalry of the great schools has often prevented concerted effort. We were most fortunate in securing the active support and leadership of Sir Berkeley Moynihan and the co-operation of nearly all the progressive surgeons in every British teaching school. The first number appeared in July, 1913, and I can well remember the thrills of hope and fear that it caused us, and of the toil and anxiety necessitated by the effort to fill its pages with suitable material.

The Great War was the only serious threat to its survival, and in the end proved to be its salvation. In October, 1914, the Editorial Committee seriously debated whether it was worth while carrying on a surgical journal at that crisis in history. The war was to be over in three to six months, and then we could begin again. Fortunately, this short-sighted policy was not pursued, but, on the contrary, we organized special series of articles dealing with military surgery, and I think these articles established the reputation of

the paper amongst not only British but also French and American surgeons.

Now that the *Journal* will be entering shortly upon its twenty-first year, we can feel fairly assured that it represents a real token and means of scientific surgical advance. The Editor's troubles are no longer concerned with the struggle to get enough material to fill its pages, but with the efforts to cope with the super-abundance of material which he has at his disposal.

The adventure with bones and joints.— My early upbringing, with the idea of becoming an engineer, and a certain familiarity with tools and their use, gave me an inclination to those problems of skeletal repair and re-construction which form the basis of orthopædic surgery. The controversy aroused by Lane's work on the operative treatment of fractures in 1910 set me to work on this subject, and for some years I carried out experimental investigations on the repair of fractures under different methods of treatment. In those days (1910–1914) there were no facilities for experimental work on animals in Bristol, and I had to go up to London once or twice a week to the laboratories of University College. The toil and expense of this work were well worth while, for in a small way it gave me an education in exact methods which nothing could replace. The practical outcome of this investigation was to establish in my own mind certain facts which are now generally accepted. The chief of these are: the value of indirect fixation of bones by methods of skeletal traction (Fig. 1), the tendency of plating to produce either chronic osteitis (Fig. 2), or non-union (Fig. 3); that the essential conditions for bone grafting were wide and accurate contact of the graft with the host bone, and firm fixation, even more than the live autogenous nature

PLATE I.

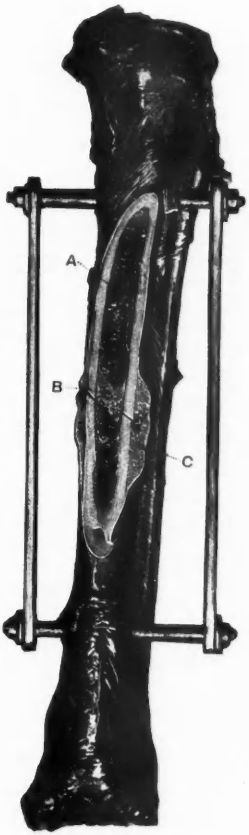


FIG. 1.

Tibia of cat twenty-one days after fracture, showing perfect position and good union treated by double transfixion.

FIG. 2.

Femur of cat six weeks after plating, showing proliferative osteitis.

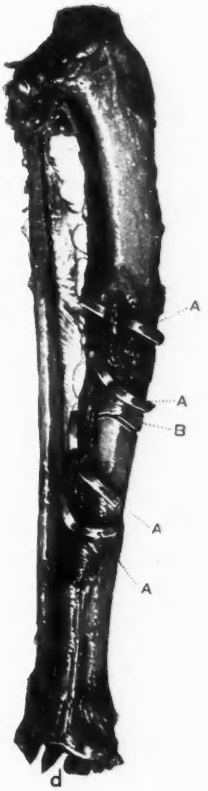


FIG. 3.

Tibia of cat six weeks after plating, showing non-union.

of the graft. As a practical illustration of the application of this last-named principle I would take a striking example :—

A boy of 12 had a spontaneous fracture of his right humerus (Fig. 4, A) from throwing a cricket ball. The bone had a cystic cavity in the interior of its shaft. I excised this part of the bone (B) and replaced it by a double beef bone graft (Fig. 4, C), which took ample bearing on each part of the humerus by being driven deeply into its medullary cavity.

He was able to return to school in six weeks and made natural and healthy growth. The bone has grown of the same size and length as its fellow, and now, ten years after the operation, although a faint outline of the beef bone can be seen, it is obviously incorporated with the human bone in intimate vital connection. (Fig. 4, D.) Curiously enough, the little boy has grown into rather a gigantic athlete of 6 ft. 4 in., who this year at Cambridge won the competition for "putting the weight" (distance of 43 ft. 0½ in.), which he actually did with the arm partly composed of beef bone.

It was just after I had finished the experimental research on bone injuries, and when the *British Journal of Surgery* was fairly launched on its second year of life, that the Great War came, and all our lives had to be re-adjusted to meet the new conditions. In two ways the war gave me a great impetus to pursue my work on the surgery of bones and joints. First, there was the very great wealth of material with which to work. Secondly, the organization of orthopædic work under Sir Robert Jones not only brought me under the sway of his gentle but compelling genius, but also associated me with other men doing this special work, both here and in France and America. My service with the Army took me for one year to Egypt, where I was in charge of the Surgical Division of the 21st General Hospital, and subsequently, in this country, I had surgical charge of one of the Military Orthopædic Centres at Fishponds, then at

Southmead, and later, after the Armistice, of the Pensions Hospital at Bath.

Apart from the horrors and tragedy of the war, those were gloriously happy years. The *camaraderie* of the profession was wonderful—not only did English, American, French, and Colonial surgeons get to know one another, but what was very much more strange,

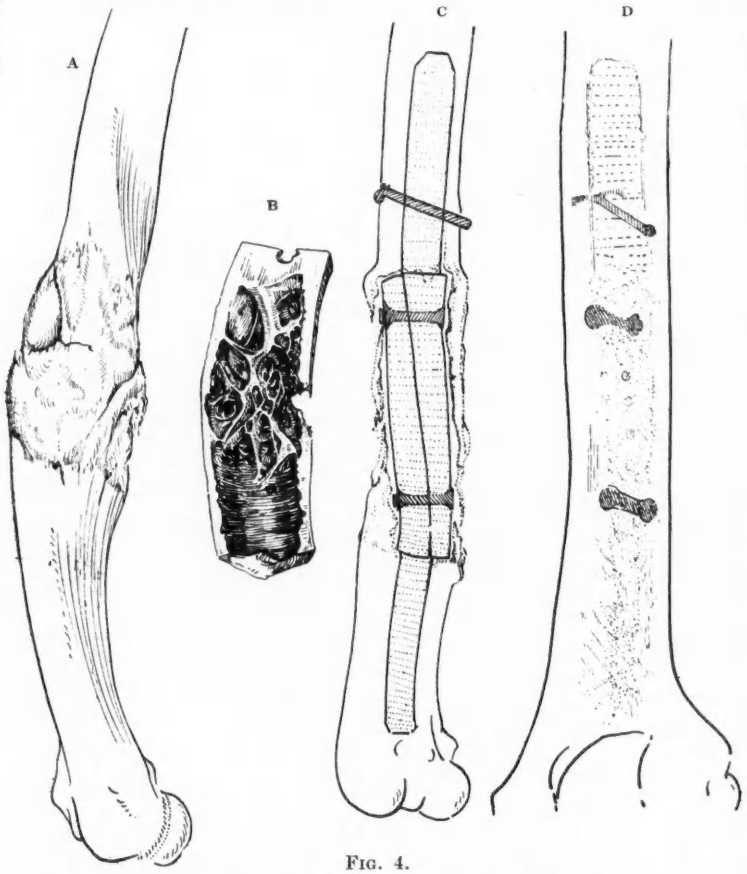


FIG. 4.

Cystic disease of humerus treated by resection and grafting with beef bone. (A) Cystic humerus. (B) Portion of shaft resected. (C) Bone reconstructed with double beef bone graft. Tracing of X-ray fourteen days after operation. (D) Ten years later the X-rays show a faint trace of the graft, which has been almost wholly replaced by human bone.

the Surgical Staffs of the Royal Infirmary, General Hospital, and Royal United Hospital, Bath, worked together as a most friendly team.

Alas! those ideals, like others, such as "a world fit for heroes to live in" and "a war to end war," have tended to vanish in the post-war atmosphere, but their memory and influence remain, and one institution, the Bath and Bristol Surgical Club, survives to remind us that there still exists a local bond of union.

But to return to more strictly "Surgical Adventures." If it will not weary you I should like to describe some of the new things, both appliances and operations, which have been evolved from my work during those years of stress and in the quieter times which followed.

It was the problem of the gunshot fracture which produced the cradle splint. We were in Egypt with nothing but regulation equipment when the hundreds of the wounded were sent to us from Gallipoli. At first it was merely the idea of making a suspended rest, in which the wounded leg could be dressed at frequent intervals, which engaged our attention. We had the run of the engineer's stores and made a frame something like a Hodgen's splint out of iron rods a quarter of an inch thick, and fixed this to uprights. Then the necessity for allowing for traction became evident, and the uprights with pulleys were added. These cradle splints and all sorts of other surgical appliances were made in great numbers at a special factory which we equipped in Alexandria, native workmen being employed at the job. When the war was over, and we had to deal with pensioners and peace problems, it seemed likely that the various modifications of Thomas's splints and Balkan beams,

which had been so largely used in France, would render the cradle splint superfluous. But I think that this has not been the case, and we are justified in continuing to use this splint, which has undergone some modification. A single pattern has taken the place of the three original types. The upper part is cut away so as to give room for the bed-pan, and two double sets of pulley wheels are provided so as to give a multiplied traction in one of two different directions. The value of the appliance is that it is a self-contained piece of apparatus, which provides for efficient traction treatment of the worst type of leg fracture, and yet is sufficiently light and compact to be easily taken about. Two other little improvements have helped this ideal of efficiency and compactness. First, the use of multiplying pulleys, two attached to the leg and two to the splint, by which the traction weight can be increased up to fourfold; and the second, a neat 10 lb. weight made like a large bobbin, which serves to wind up all the slack cord and which can be made fast at any point. (Fig. 5.)

Perhaps the most difficult fracture to deal with, either for the surgeon or the nurse, is that involving the spine. And it was the terrible problem of treating the gunshot wounds of the spine which set me thinking how it would be possible to fix a spinal case and yet provide for turning, inspection or dressing. At first we worked away with the high frames of the Pearson's bed, making a wooden frame to be suspended in this and revolved. This primitive pattern has gradually been superseded by others, and it is only during the last year that I have got a model which satisfies me. The patient lies in a frame which is concave from side to side. It is covered by a mattress which is pierced by a hole for the bed-pan. When he has to be

PLATE II.

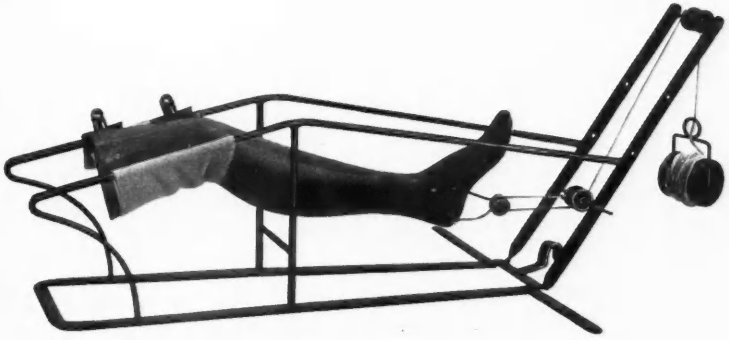


FIG. 5.

Cradle splint for traction fractures of femur or leg bones.

In the model shown traction is applied by a transfixion pin. The weight is a 10-lb. bobbin on which the slack cord can be wound. This weight can be multiplied, two, three or four fold by the double pulley blocks.

turned he is covered by a second mattress, which contains a hole for his face, and then he is caged in by two hinged halves of a covering frame. When

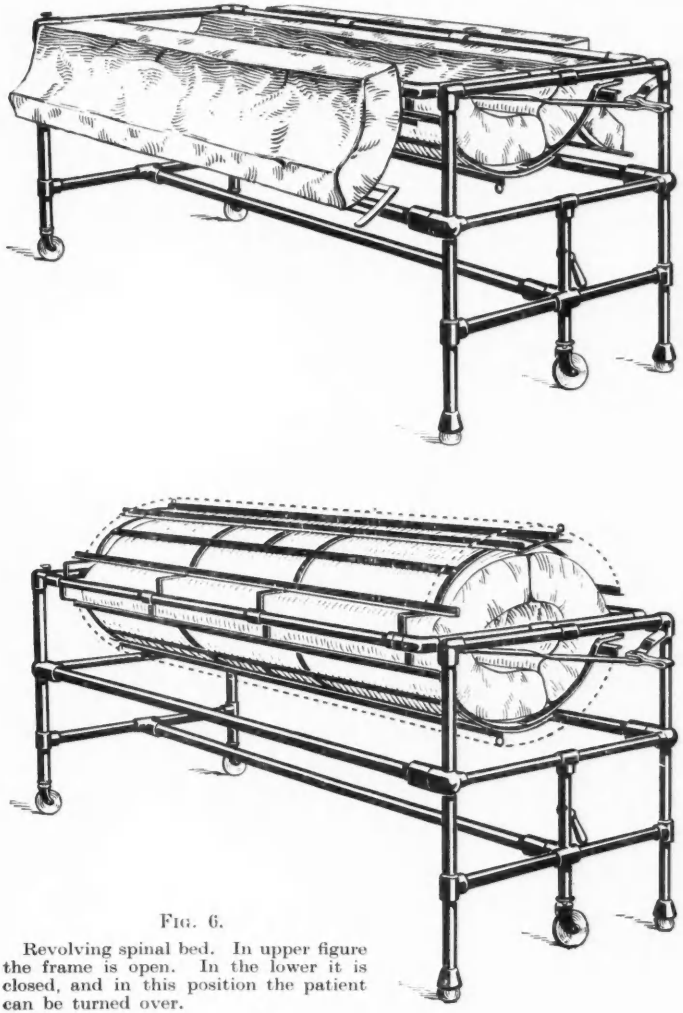


Fig. 6.

Revolving spinal bed. In upper figure the frame is open. In the lower it is closed, and in this position the patient can be turned over.

these are fastened the patient lies securely held in a box six feet long, which is elliptical in transverse section. The whole of this cage can now be rotated so that he lies face downwards, and the back part of the frame, which is also hinged, can be undone and the patient's back exposed. (Fig. 6.) Thus, whether the spine is fractured or whether a bone grafting operation has been done, we have achieved a method by which perfect immobilization can be attained, and yet in which accessibility and exposure of the back can be assured, and this by a nurse working single-handed.

As I have already said, one of the most fascinating problems of reconstructive surgery is the possibility of transplanting human tissues so as to take the place of parts of the skeletal tissues lost by injury or disease. Skin and bone are the two tissues most often transplanted, but owing largely to the pioneer work of Gallie, the value of fascia for reconstructive work has been demonstrated. By the use of long strips of fascia lata the ligaments of the joints can be replaced or supplemented.

First, let me deal with the hips and the knee, where the ilio-tibial band can be used as a pedicle graft, allowing one end to remain in its natural attachment.

In the hip-joint paralysis of the gluteal muscle makes walking without crutches impossible, because the pelvis cannot be balanced on the leg, but simply drops down. If in these cases the tensor fasciæ femoris is still active, then the ilio-tibial band, which is really its tendon, can be freed from its lower attachment, brought up and drawn through the base of the great trochanter and attached to the superficial part of the erector spinæ muscle. By this means a strong abductor sling, formed of a new digastric muscle, is provided to take the place of the lost gluteals. (Fig. 7.)

In the knee-joint the crucial ligaments, and especially the anterior crucial, are frequently injured and torn across by any severe wrench which partly or wholly dislocates the knee. In those cases when the severity of the injury is not recognized at the time the knee is left in a very unstable condition. When the patient puts weight on the leg the tibia slips forward, giving the patient a great sense of insecurity, even if he is not thrown down. No

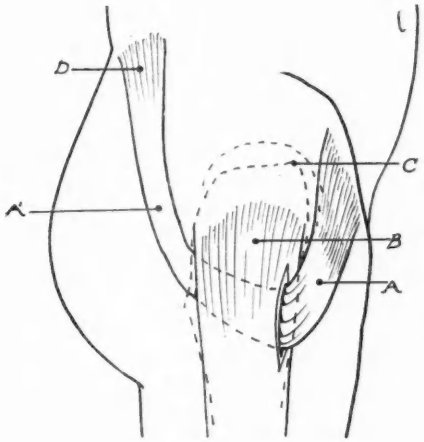


Fig. 7.

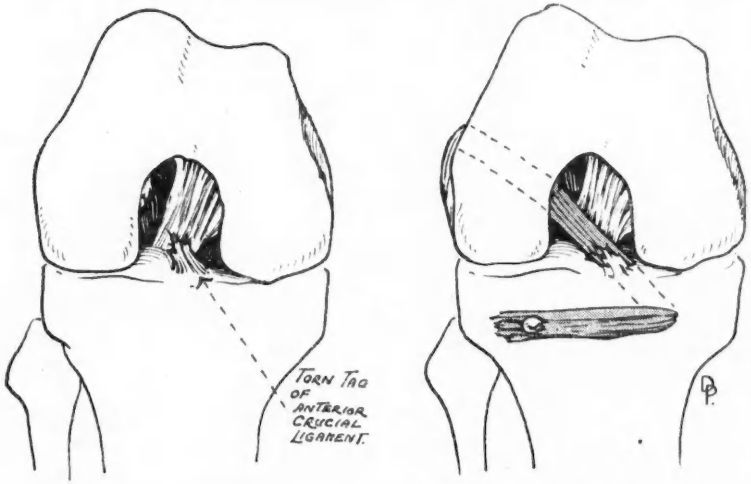
New muscle-fascia sling for paralysis of the gluteals.

A Tensor fasciæ femoris.
A¹ Fascia lata.
B Great trochanter.
C Head of femur.
D Erector spinæ.

apparatus will control this liability to dislocation unless it is cumbersome or locks the joint. It was when I was working at the Beaufort War Hospital that the problem first presented itself to me, and I was able to devise an operation which, with certain modifications, has now become standardized. The knee is opened from the front and the condition of the crucial ligaments verified. A long strip of fascia lata is isolated, leaving its lower attachment to the outer tuberosity of the tibia intact. This new ligament is

then brought first through the outer condyle of the femur and then through the head of the tibia, so as to follow the original line of the anterior crucial. (Fig. 8.)

The same powerful, natural suture material is also available for repairs of the broken knee-cap. All surgeons agree that the usual transverse fracture of the patella needs to be fixed by open operation, because the fragments become drawn apart by the pull of the quadriceps, and because non-union is caused by the interposition of the flap of the aponeurosis. Wire is generally used, either as vertical sutures, holding the superficial parts of the bone, or else as an encircling band. But the drawback to this method of metallic suturing is that though it gives a strong union, yet it generally causes a bony overgrowth round the



(1.)—Condition of knee-joint on exposure at operation.

(2.)—Anterior crucial ligament replaced by band of fascia lata from muscle covering thigh 12 inches long, 2 inches wide. Fascia threaded through femur and tibia by tunnels drilled in bone, and finally fixed to tibia by ivory nail.

FIG. 8.

sutures, which leads to a condition like osteo-arthritis. If instead of encircling the bone by metallic wire a piece of the fascia lata is taken this bony excess is avoided. A strip of fascia is isolated, but with its lower attachment intact. It is threaded round the patella going through the quadriceps above and the ligamentum patellæ below. This not only makes a firm, strong suture of the broken bone, but the original attachment of the ilio-tibial band to the tibia gives a fresh, direct attachment of the extensors of the knee to the shin-bone. (Fig. 9.) In the shoulder-joint a new and powerful ligament can be made from a free piece of fascia lata. This method is of great value in the treatment of recurrent dislocation of the shoulder. After the joint has been dislocated several times a large gap is formed in the lower part of the capsule through which the humeral head is liable to slip whenever the arm is abducted and raised. A great number of different operations have been tried to remedy this condition, but it is very difficult to expose the real seat of the trouble, which lies deep in the axilla, and most of the operations suggested have led to failure. It seemed to me that what was required was a fascial sling as strong as the capsule itself, by which the head and neck could be prevented from slipping downwards and forwards.

In actual practice this operation has proved both simple and effective. A strip of fascia lata 1½ inches wide and 8 inches long is prepared. Three incisions, each 1½ inches long, are made, one in front, one behind, and one above the shoulder-joint. By blunt dissection with the point of the finger a tunnel is made right round the joint beneath the deltoid muscle and close to the capsule. The new fascial graft is passed from before backwards beneath the joint, and its two ends

are brought upwards so as to meet and cross above the acromion, where they are fixed by silkworm-gut sutures. (Fig. 10.)

Perhaps — I fear probably — my account of my

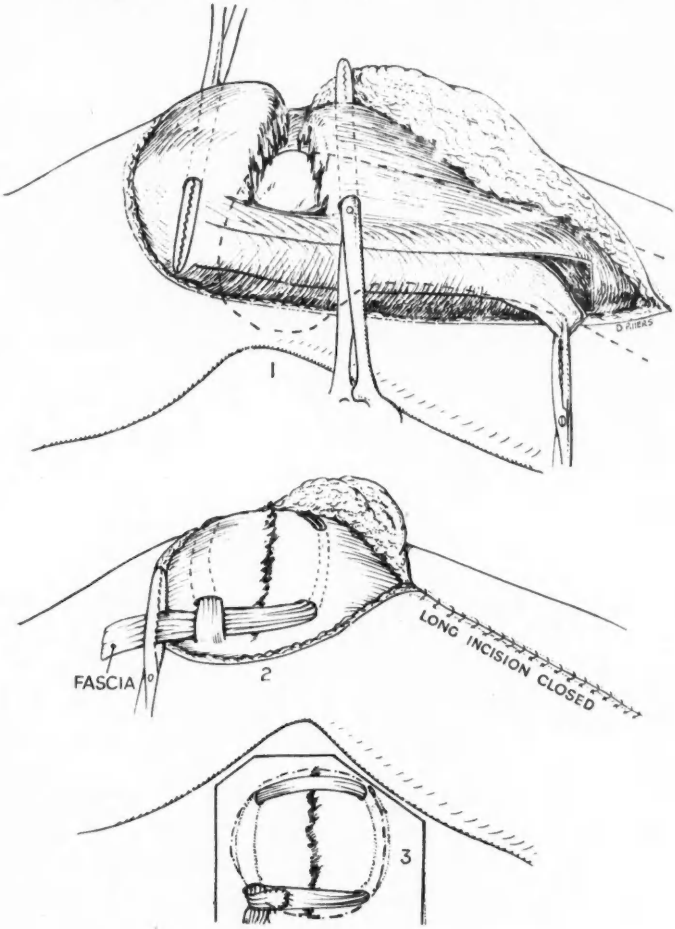


FIG. 9.

Repair of fractured patella by means of an encircling band of fascia lata.

surgical adventures so far will have left the impression of a record of triumphs and successes, a blowing of trumpets, which I had better have left for someone else to do. But let me make a last effort to regain some semblance of modesty by the confession that my greatest adventure has been my greatest failure. It was in the years 1910 to 1914, just about the time of the conception and birth of the *British Journal of Surgery*, that I began regular visiting of the hospitals in this country and abroad with a travelling surgical club,

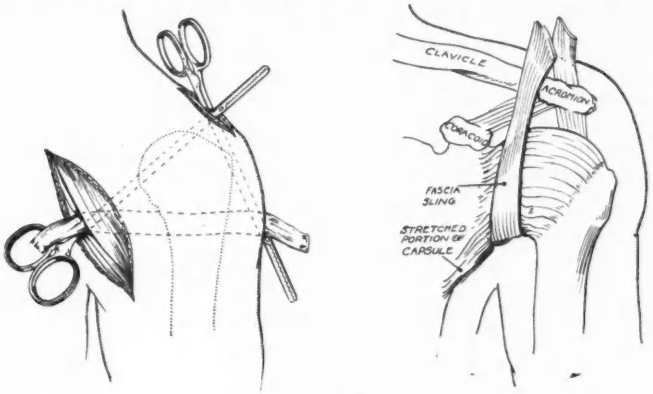


Fig. 10.

Operation for recurrent dislocation of shoulder by use of a free flap of fascia lata.

with the result that the ideas of reform of our hospital system dawned on my mind. Then followed the fateful years of the war, when the possibility and the advantages of organized co-operative work was demonstrated.

It was proved, for example, in connection with the gunshot fractures of the femur that the mortality was reduced from 80 per cent. to 10 per cent., not by the discovery of any new method of treatment, but chiefly by administrative efficiency, the chief elements of which were segregation and team work.

After the war was over it seemed so obvious to apply those lessons to the conduct of medical affairs in times of peace. The clear call in this city was for the two great voluntary hospitals to sink their differences, to join in one effective unit to which other and smaller hospitals would soon have been added. Then, and then only, would it have been possible to have organized special departments,such as orthopædics and a fracture service, worthy of a modern city; then, and then only, could clinical teaching units have been provided fit for a modern University; and then, and then only, would it have been possible to meet and join on fitting terms with the other great municipal hospital system of the city.

But these things were not to be, and we have to find what consolation we can from the spectacle of new hospitals springing up whilst the old hospitals struggle for a precarious existence. The University and the municipality, although friendly to the idea, seem powerless to initiate or to carry out any re-organization, and have to be content with an indefinite partnership with a hospital organization which they are impotent to control.

One almost fears that nothing short of some social cataclysm, such as Communism, bankruptcy, or war, will be strong enough to break down old prejudices, and to substitute a striving for the common good for the struggle for individual existence in the organization of our hospital service and the arrangement of clinical teaching.

Acknowledgments are due to MESSRS. JOHN WRIGHT & SONS LTD. *for the loan of the blocks for Figs.* 1, 2, 3, 7, 10; *to* MESSRS. CASSELL & CO. LTD. *for Fig.* 9; *to* MESSRS. J. NESBIT, EVANS & CO. *for Fig.* 6; *to* "THE LANCET" *for Fig.* 4.

ENLARGED PROSTATE.*

BY

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ENLARGED prostate is a common disease. Most doctors probably see a case or two in the course of a year's work. At the Bristol Royal Infirmary one often has three or four cases side by side. It is no respecter of persons; patients who have lived a blameless life both morally and medically are by no means exempt. It is a condition which has been responsible in times past for an immense amount of suffering, and has added grievously to the burdens of old age. Some famous men have been its victims, including Dr. Ken, who was made Bishop of Bath and Wells in the reign of Charles II, was sent to the Tower with six other bishops by James II, and wrote a number of well-known hymns. In his old age, which was spent partly at Naish House, near Failand, and partly at Longleat, he suffered severely from the symptoms of enlarged prostate. Before surgery came into its own for this condition there was no resource except a catheter life, and this was usually a miserable existence. I well remember one of my patients, himself a sufferer, telling how he had to minister to his old father for about two years, and the pain and dismay which resulted.

Another reason why I have chosen this subject

* A Paper read at a Meeting of the Bristol Medico-Chirurgical Society on 14th December, 1932.

for consideration this evening is that it is becoming clear that a number of somewhat different anatomical conditions may be responsible for a patient's symptoms, and the signs and treatment are by no means always the same. Also, there are certain problems connected with the method of operating and after-treatment about which there is plenty of room for difference of opinion. The earliest age at which enlarged prostate has to be considered as a probable cause of symptoms is somewhere about 48; my youngest patient was 49. It is not common under 60; on the other hand, it may persecute patients to an extreme old age, and one fairly often has to operate on octogenarians; my oldest was 85; he did excellently.

It is worth while to recognize the following anatomical conditions, all of which may be classed under the general heading of enlarged prostate:—

(1) General enlargement of the whole prostate. This bulges up into the bladder and back into the rectum and may reach a great size. It is often seen in very old men.

(2) General enlargement of the prostate composed of rounded nodules. This produces much the same signs and symptoms as the above.

(3) So called "middle lobe" cases. There is not much general enlargement, but the middle lobe stands up like a pillar behind the internal meatus.

(4) Prostatic bar. There is a hard ridge forming the posterior lip of the internal meatus, with little or no general enlargement of the prostate.

(5) Atrophic prostate. Small and hard, often associated with prostatic bar.

(6) Nodules in the floor of the prostatic urethra about the size of a pea, with little or no general enlargement.

(7) Cancer of the prostate. This is outside our subject.

It will readily be understood that all these differing types produce some variation in signs and symptoms. They have in common a progressing tendency, and the patient is likely to get steadily worse. In some cases the nodules in the prostate which were producing the symptoms are innocent for a time but develop malignant disease at a later stage.

In general, the first symptom of enlarged prostate is frequency of micturition, which for some unexplained reason is worse at night. The loss of sleep may be one of the most serious parts of the patient's disabilities. The cause of the frequency is not entirely easy to explain; probably the sphincter at the vesical orifice is impeded in its work by prostatic tissue enclosed within its circle, and thus readily allows a few drops of urine to trickle through into the urethra and start the reflex.

The passage of urine becomes more and more difficult, with straining and dribbling, and eventually goes on to acute retention. This is often precipitated by some indiscretion in drinking, or by the patient holding the water too long. Sometimes, after a few days of catheter treatment, the power of passing water is recovered for a time, but if this recovery does not take place within three or four days it is not likely that the patient will be able to function again without an operation.

From this standard picture there are many variations. Cases with a prostatic bar, or nodules in the urethra, and the atrophic prostates, will probably escape retention though they may suffer badly from frequency. In other cases the bladder gradually distends until the patient is only passing a few ounces every hour or so and retaining a pint or more of

residual urine, so that the bladder is always to be felt reaching up to the umbilicus. They may go on for months in this condition. In other cases, and especially if the patient has been catheterized, his sufferings are increased by the advent of cystitis, which in its turn may go on to the formation of a stone. Bleeding after catheterization is common, and in a few cases it may occur spontaneously. Sometimes we are told that there has been no frequency prior to the onset of retention; this may occasionally be a fault of memory, but in other cases it appears to be true.

Pain is not prominent at first, but when there is great straining, or retention, or cystitis, or stone, it becomes distressing. The straining not infrequently gives rise to rectal prolapse or to piles, or there may be partial incontinence of fæces. Eventually the general health begins to fail. Sometimes high blood-pressure appears to be due in part to prostatic obstruction. I have seen chronic bronchitis cured by prostatectomy. But, as a rule, the symptoms are those of chronic uræmia; loss of appetite, a tendency to catheter fever, urinous breath, dry, furred tongue, twitching, drowsiness and the like. It is of great importance to remember that a patient's kidneys may be gravely impaired, and yet the mental and physical health appear to be normal.

The diagnosis of enlarged prostate ought not to be difficult, but it should be realized that the fact that no enlargement of the prostate can be felt *per rectum* is no proof at all that the gland is not the cause of the symptoms. The generally enlarged prostate does bulge into the rectum, but the enlarged middle lobe, the prostatic bar, the atrophic prostate, and the cases with a nodule in the urethra produce nothing that can be felt by the examining finger. The rectal

examination should not be made when the bladder is full, or the prostate will be thought to be enlarged when it is nothing of the sort. In practice, therefore, one often has to make the diagnosis on symptoms, but in doing so, there are several conditions which must be thought of and excluded. I have been deceived once or twice by each of the following:—

Stricture of the urethra causes obstruction, but not as a rule frequency, and a catheter fails to pass.

Stone in the bladder may be detected by the metal sound, a skiagram, or cystoscopy.

Cancer of the bladder may mimic enlarged prostate very closely, and can only be recognized by the cystoscope.

To mistake vesical calculus, or cancer of the bladder, for enlarged prostate is not of very great moment, as the treatment advised will probably be surgical.

Simple cystitis is occasionally seen in old men, coming on without obvious cause, and to be cleared up by bladder washes and urinary antiseptics. It would be a serious mistake to open a bladder in such a case. Fortunately, pus in the urine is usually a late, not early, association with an enlarged prostate.

Three or four times I have had a patient come up for retention of urine and complete intestinal obstruction. In the first case I was misguided enough to perform colotomy, only to find that the cause of the obstruction was a full bladder impacted in the pelvis.

Cancer of the prostate is found in about one case in five with prostatic symptoms. It cannot be distinguished from innocent enlargement on the history, but the rectal examination shows stony hardness, fixity, and perhaps extension of the growth to the rectal wall or the base of the bladder.

General enlargement of the prostate and middle

lobe cases can be diagnosed by a cystoscopic examination, or by passing a catheter after the patient has, as he thinks, emptied the bladder, and finding residual urine. There are, however, objections to instrumentation in many cases. It frightens and distresses the patient, and may lead to cystitis. If the diagnosis is reasonably certain, I do not usually pass any instrument until the patient is under the anæsthetic for the operation.

Before we are in a position to advise treatment it is essential to arrive at an accurate opinion as to the function of the kidneys. Renal efficiency or inefficiency is the key to the prognosis. It must never be forgotten that *symptoms* of chronic uræmia are only seen when the kidneys are desperately diseased; the patient may appear to be in good general health when his renal functions are so bankrupt that an operation to remove the prostate straight away would kill him. We have, therefore, to resort to special tests to determine renal function.

(*a*) *Polyuria and the Specific Gravity Test.* According to the modern theory the glomeruli of the kidney filter out from the blood vast quantities of plasma minus proteins, while the renal-tubule-cells re-absorb most of the water, glucose and salts, but let pass the urea, uric acid, sulphates, etc. If on account of back pressure the tubule cells are damaged they fail to absorb, and the urine is dilute and excessive because they cannot do normally active work against the osmotic pressure exerted by the urea. If the daily output of urine is over 60 ounces, and the specific gravity is low, the kidneys are damaged. In these cases the normal daily variations in the specific gravity of the urine are flattened out, and the figure remains about the same night and day.

(*b*) *The Blood Urea Test.* A few c.c. of blood are sufficient for the estimation. The normal lies between 20 and 40 mgrm. (that is, between 0·02 and 0·04 per cent.). 80 mgrm. would mean very seriously damaged kidneys.

(*c*) *The Urea Concentration Test.* The patient is given 15 grammes of urea in 4 ounces of water by mouth, and fluids are restricted. The urine is collected one, two, and three hours after, and the concentration of urea estimated. This can be done in a few minutes, without any mathematical calculations, by means of the Doremus ureameter. Good kidneys will concentrate to 3 per cent.; anything under 1 per cent. means very serious damage. Opinion differs as to which of these three tests is the more reliable. Personally, I pin my faith to the urea concentration test. It certainly has the advantage of simplicity.

The treatment of enlarged prostate may be considered under the headings of non-operative and operative.

1. Non-operative treatment is always welcomed by the patient, but has a strictly limited field. It may be classified under three headings: catheter life, X-ray treatment, and "masterly inactivity." To take the last first, a policy of inactivity may be followed, because the patient is too bad, or because he is not bad enough. If on account of cardiac trouble, or severe bronchitis, or drowsiness due to uræmia, operation would evidently be hopeless, and the patient is not in pain nor completely obstructed, it is best to do nothing. Such cases nowadays are seldom seen. Again, there are men who have enlarged prostate and have to pass water once or twice during the night, but there is no straining or retention and no pain. Some of these may be let alone for a time, at

any rate. But this is a policy which is only safe in a few. I well remember one patient whom I allowed to pay a visit to America before having his operation, because it seemed an early and favourable case. When he came back the kidneys were gravely affected, and he died of gangrene of the palate, no doubt uræmic in origin. That inactivity was anything but masterly. To postpone wisely we must investigate carefully, and be sure that there is no cancer of the bladder masquerading as enlarged prostate, that the renal functions are not impaired, and that residual urine is not above an ounce or two. Of course, in a man of seventy-five or eighty one ought not to advise surgical treatment unless the patient is already suffering considerable inconvenience, but in a man under sixty it must be remembered that we are dealing with a progressive disease, and it is better to operate while the going is good.

Catheter life is a miserable existence. A few men have bladders that will stand any amount of cystitis, and urethras like a tube of brass; in days gone by these lived the catheter life fairly happily for years. The great majority are dead in six months. In practice it is seldom that the doctor can pass the catheter two or three times a day, so proper precautions are not taken, and septic infection carries the patient off.

X-ray treatment, in a few selected cases, has a definite value. The prostate must be generally enlarged; the obstructive middle lobe cases, the prostatic bar, and the nodule in the urethra are not likely to be benefited. Retention or semi-retention must not be present, or valuable time may be wasted and the kidneys allowed to fall into bankruptcy before the inevitable operation is performed. Men past

eighty are the most suitable subjects, and I have known one or two considerably improved.

2. Operative treatment is necessary in the great majority of cases, and can usually be relied on, if the patient survives, to give great relief; it often makes old men young again.

The routine treatment is prostatectomy, but there are several variations possible, including the punch operation, the diathermy-punch, partial prostatectomy, and permanent suprapubic drainage. Operation having been decided upon, it is necessary to consider whether it shall be a one-stage operation, or whether to drain the bladder first, wait a while, and then remove the prostate. Here opinion differs. Some surgeons always do a one-stage, others invariably practise the two-stage method. Personally, I take each case on its merits. In my last 118 cases there were 63 done in one stage and 55 in two. There were 41 others treated by suprapubic drainage which never came to prostatectomy. My rule is to use a two-stage procedure if the urea concentration test is below 1·8 per cent., and always if an acute retention is present, or the patient habitually carries a bladder up to the umbilicus. I can remember when for lack of this precaution the mortality in Bristol used to approach 50 per cent.

In the two-stage method, at the first operation, a large tube is inserted into the bladder above the pubes if the time interval is to be only a few weeks, or a Pezzer tube if it is to be long. If the bladder is up to the umbilicus it must be emptied very gradually, as by tying a No. 2 catheter in the urethra for twenty-four hours. Rapid emptying may be fatal from anuria; in these cases the valvular action of the ureters is often incompetent, and drawing off the water suddenly reduces the pressure, not only in the bladder but

also in the kidneys, which is ruinous to the tubule cells.

The interval between the first and second stages is normally two or three weeks, but in heavy risk cases, with nearly bankrupt kidneys and urea concentration test under 1 per cent., it should extend to months. I have been able to bring through some very bad starters in this way, including a man whose concentration test was as low as 0·5, where we waited four months. The drainage allows time for the kidneys to recover and for sepsis to run itself out, aided by bladder washes, and pyridium by mouth. Pyridium is much more effectual than hexamine.

I now perform prostatectomy by the open (Thomson Walker) method, with a long incision; the prostate can usually be shelled out without a finger in the rectum. A great advantage of this over the old method with a small incision is the diminution of post-operative spasm-pain. A large tube is left in the bladder for two days, and a catheter tied in the urethra for four days to allow irrigation. Sometimes, without taking too much time over it, we can, by suturing, get the cavity left by the prostate sufficiently clean and dry not to need a pack. More often I think it is better not to prolong the operation, but to put in a pack soaked in mercurochrome. It not only checks bleeding, but also prevents the formation of a septum across the cavity. The pack is taken out, under gas, on the second day. One should have another ready to go in again if necessary; on three occasions I have had severe hæmorrhage. Some surgeons never use a pack. I envy their skill, or their boldness. Some surgeons use a Pilcher bag in the cavity, but my experience of it has been disastrous. If there is no pack, one can profitably use continuous aspiration

for forty-eight hours, putting a suction-tube down inside the big rubber suprapubic drain. This avoids the need for a Hamilton Irving apparatus, and prevents peri-vesical septic infection. If there is a pack, or if no suction apparatus is available, continuous irrigation through the catheter for forty-eight hours, followed by irrigation twice a day, is valuable. A Hamilton Irving apparatus must be worn. It is a good thing to block one of the holes, and let the tube from the other drain to a bottle over the side of the bed, out of the patient's way. In my experience the first normal micturition is on the fourteenth to the seventeenth day.

Since the end of the Great War I have removed the prostate in 118 cases, 58 at the Infirmary and 60 in private. Amongst the private cases the mortality in the nursing home was 11·6 per cent.; in the total series of 118 it was 13·5 per cent. For the sake of comparison some recent figures are shown in the following table:—

*Mortality of Suprapubic Prostatectomy.**

	No. of cases.	Died per cent.
Thomson Walker (private cases)	472	5·2
St. Peter's Hospital	2,691	9·9
Eleven general hospitals	3,451	19·5
Present series (private cases) ..	60	11·6
,, ,, (all cases)	118	13·5

The variation in the figures is remarkably wide and calls for some notice. No one would question the superior skill and vast experience of Sir John Thomson Walker and some other specialists in urology. But to be fair to the general surgeons, one must call

* Sir J. Thomson Walker, Lettsomian Lecture, *Lancet*, 1930, i., 1,163, 1,219, 1,273.

attention to the fact that in a series of 274 of his cases, in 70 per cent. the urea concentration was over 2 per cent., whereas in my series it was over 2 in only 35 per cent. That is to say, he had 30 per cent. of heavy-risk cases; we had 65 per cent. Evidently the specialist in urology gets a large proportion of favourable early cases.

A few words as to complications and causes of death. The main cause of death is uræmia from renal insufficiency, with or without septic infection. Shock, hæmorrhage, sudden cardiac failure, pneumonia, diarrhœa, thrombosis of the iliac veins, and gangrene of the throat have each carried off one or two of my fatal cases. The uræmic deaths could sometimes have been avoided by a two-stage operation. The less serious complications have been partial intestinal obstruction, septic epididymitis, and septum formation. Partial intestinal obstruction comes on within a day or two of the operation, and is, in my opinion, due to perivesical cellulitis, or abscess formation, between the bladder and the rectum. In two of my cases it cured itself by discharging pus into the rectum; in others there was a mucoid discharge *per anum*. Epididymitis comes on about a fortnight after operation, and is heralded by a rise of temperature. It usually subsides in a few days; in one of my cases an abscess formed and had to be opened. Some surgeons cut the vas deferens to prevent this complication. Septum formation is a great nuisance when it occurs, and makes itself evident about the third week. The mucosa of the base of the bladder has united across the top of the cavity left by the prostate, with or without a small, unhealed orifice. The patient is late to start passing water, and has to strain; a catheter will not pass into the bladder, and the suprapubic

fistula will not close. I have had three or four cases, and all amongst the small number in which a pack was not used. To avoid this trouble, if one does not wish to pack, it is recommended to sew down flaps of mucosa in the side of the cavity. If septum formation has taken place, there is nothing for it but to re-open and cut it away.

Finally, a few words may be said with regard to other operations besides prostatectomy. When the patient is a good starter it is more satisfactory to remove the gland, but in a heavy-risk case one may do less and get a good result with some types of the disease. The generally enlarged prostate does not lend itself to partial operations, but the thumb-like middle lobe, the prostatic bar, and the nodule in the urethra may be nipped away by means of Jessop's prostatic punch, with the bladder opened and the rest of the gland left behind. Once or twice I have given relief by shelling out an adenoma from the gland. At least two diathermy punches have been introduced. I have some experience of one invented by K. M. Walker, which is passed *per urethram* and can be used with or without an open bladder. There is a more recent one invented by Canny Ryall. These instruments have a distinct place in the treatment of heavy-risk cases with enlarged middle lobe or prostatic bar.

Lastly, the patient with grave cardiac disease or nearly hopeless kidneys, and more or less complete retention of urine, can be given great relief by some form of permanent suprapubic drainage, though there is no wholly satisfactory apparatus for the purpose. Pezzer's tube can be got to fit tightly and not leak even if the man leads an active life, but it needs to be changed every six weeks, which may necessitate an anæsthetic. A plain tube and flange works well

sometimes if the patient is in bed, not otherwise. Arnold's three-way suprapubic box and urinal looks promising, but I have found it difficult to adjust satisfactorily.

In my post-war series of 159 cases, not including cancer of the prostate, which is outside the scope of the present article, 41 were treated by suprapubic drainage. In some of these it was intended, if all went well, to remove the prostate later; in others the drainage was to be permanent. Eleven died; the others were sent home still wearing a tube.

I fear there is but little reference in this paper to the writings of others. It was my purpose to place before you, not a summary of the literature, but my own experience since the end of the war.

ANTERIOR POLIOMYELITIS, OR INFANTILE PARALYSIS.*

BY

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THE subject of infantile paralysis is of wide general interest, since the treatment of almost every case calls for the co-operation of the general practitioner with physician, surgeon, pathologist and public health officer. The disease has been known for a long time, having first been described by an Englishman, Michael Underwood, in 1784.

Of late years the annual notifications in this country have varied between a minimum of 386 in 1922 and a maximum of 1,396 in 1926. I am convinced that the disease is much more common than these figures would suggest, and that many of the milder cases remain undiagnosed while yet more escape notification.

Great Britain has been lucky to have escaped any serious epidemics such as those which have afflicted other countries. The greatest of these attacked New York City and State in 1916, when there were 13,223 cases and the mortality exceeded 25 per cent. In the same area more than 2,000 cases were reported

* A paper read at the meeting of the Bath, Bristol and Somerset Branch of the British Medical Association on 25th January, 1933.

in 1931. Other notable epidemics have taken place in recent years in Scandinavia, New Zealand, Australia and Central Europe. As we can never tell when our own luck may turn, it is just as well that we should strive to learn all that we can of modern methods of prevention, diagnosis and treatment. It is from the intensive study of poliomyelitis during epidemics that most of the advances in our knowledge have been derived. A private benefaction to the State of Vermont, U.S.A., enabled most valuable experimental and clinical work to be carried out from 1910 onwards, and in connection with this the names of Caverley, Flexner and Lovett became justly famous.

I do not propose in this paper to dwell upon details of surgical treatment, but rather to attempt a sketch of anterior poliomyelitis from a general standpoint. In so doing I shall trespass upon the domains of other branches of the profession, but as my excuse I must plead that the provinces of physician and surgeon overlap at most stages of the disease, and that each must strive to know something of the other's territory.

As you all know, infantile paralysis crops up sporadically at all times of the year, though most commonly in the late summer and the autumn. It is also during these months that epidemics usually arise. During the first six months of life natural immunity is high, though I have come across the record of one case commencing in a child aged six weeks. The highest incidence is during the second year of life, and the vast majority of cases arise during the first decennium. From then onwards there is a rapid fall, though persons may be attacked at any time of life. In persons over twenty years of age the mortality is very high, frequently 50 per cent. or more. Death

is most commonly due to involvement of the muscles of respiration. It is a curious fact that all epidemics show a slight preponderance of males amongst those attacked.

The only animal in which the disease can be experimentally produced is the monkey. In several instances the virus, obtained from human sources, has been experimentally passed through a series of monkeys. Infection usually takes place through the nose, and in monkeys which have been originally infected by direct inoculation into the brain or into the peritoneum the virus has been subsequently isolated from the nasal mucus. It is known to be ultra-microscopic, since it will pass through a Berkefeld filter V though it is held up by a Berkefeld W. The incubation period of the disease is commonly three or four days, but it may vary from two to ten.

Acute poliomyelitis is a generalized infection, and some changes are found in most of the organs of the body and in the lymphatic tissues, but the brunt of the attack is borne by the nervous system. In experimentally produced cases one of the earliest changes found is swelling and hyperæmia of the posterior root ganglia. This is of interest, since hyperæsthesia, either general or confined to one or more limbs, is one of the most constant symptoms during the acute stage of the disease. Meningitis arises early. There is hyperæmia and œdema of the cord associated with perivascular infiltration and often hæmorrhages. The grey matter of the anterior horns suffers most, and the lumbar enlargement is more commonly and extensively involved than other parts of the cord. The motor cells of the anterior horns may be irreparably destroyed or they may be only temporarily thrown out of action by the pressure

of blood and exudate. It is owing to this latter fact that some degree of recovery from the initial paralysis may always be expected.

The clinical types are various. One sometimes meets with a fulminating type in which paralysis is the first thing noticed, and in which the child may be very ill with every symptom of a severe generalized infection. Much more commonly, however, the patient appears to have a feverish cold with sore throat, running nose and a rise of temperature. An initial attack of vomiting is very common, and there may be diarrhœa, retention of urine, and sometimes a rash. The rash is not distinctive, and may be mistaken for German measles or scarlet fever. Unless an epidemic happens to be raging at the time, the child will probably be thought to be suffering from an attack of influenza. The first stage may pass directly into the second in which meningeal symptoms appear, but there may be a short interval during which the child appears to have recovered, and may even go back to school. After this brief intermission the temperature rises again. This variety has been very common in Australia, and the appearance of two "humps" of temperature on the chart has caused it to be known as the "dromedary" type.

The signs and symptoms of the second or meningitic stage are as follows:—

1. The child is drowsy, but is irritable when disturbed.

2. Muscle twitchings and tremor may be noted.

3. There is complaint of pain in the neck and the "spinal sign" may be elicited. To obtain this sit the child up and try to persuade it to kiss its knee. It will try, but will give it up "because it hurts," *i.e.* because flexion of the spine gives rise to pain.

4. The sign of Amoss. This depends upon the fact that when the child sits up it likes to keep the spine extended, and to do this tends to lean backwards, supporting its weight on the extended arms, as on a tripod. If asked to fold the arms across the chest the child will probably do so, but quickly resumes its former position.

5. Kernig's sign may be present.

6. There is early loss of reflexes, especially in limbs which will later become paralysed.

7. Hyperæsthesia is commonly pronounced, either generally or in one or more limbs.

8. In addition, there are the signs of a generalized infection, such as sweating, fever, headache, and retention of urine.

If the above signs and symptoms are insufficient to enable a definite diagnosis to be made, they should at least suggest the imperative necessity for the performance of a diagnostic lumbar puncture. The cerebro-spinal fluid presents the following characters :—

It is under slightly increased tension. It is clear or slightly opalescent. The chlorides are normal in amount, whereas in tuberculous meningitis they are diminished. There is a variable increase in the cell count. At first this is mainly due to an increase in the polymorphonuclears, but later mononuclears predominate. As the paralytic stage approaches the globulin rapidly increases in amount.

It is quite possible to effect a diagnosis at this stage, though this is rarely done except in the presence of an epidemic. During the New York epidemic of 1931 57 per cent. of the cases are said to have been diagnosed in the preparalytic stage, and in Australia of late even a higher proportion have been so diagnosed. Seeing that this is the only time when specific treatment

is of any value, it is to be hoped that we may be not less successful in this country, at least in the presence of an epidemic.

Paralysis does not, as a rule, appear for a week or more. The situation and extent are, of course, very variable. Any muscle may be affected, and may be completely paralysed or merely weakened. The latter condition is two and a half times as frequent as the former. This is what one would expect, since the vessels which supply the anterior horn cells run horizontally, and if any one of them were thrombosed it would give rise to a very limited destruction of the grey matter. Muscles, on the other hand, often derive their motor supply from quite an extensive area of the cord. Take, for example, the ilio-psoas. The nerve supply of this muscle is from the last dorsal and all the lumbar nerves, and it is rarely completely paralysed.

In every epidemic it has been noticed that when a case of anterior poliomyelitis crops up in a household other members of the family tend to present symptoms exactly similar to those of the preparalytic stage of poliomyelitis, but without themselves developing the illness. It has long been suspected that these were in reality abortive cases. Lovett examined a great many of them, taking careful measurements of their muscular power, and he found that a certain number did develop weakness of one or more muscles so slight that it would ordinarily escape observation. In many others muscular power was unaffected. In a case of the latter kind in the year 1910 Flexner injected the nasal washings into a monkey, with the result that this animal developed a typical attack of poliomyelitis. This observation has recently been repeated in two other cases by Paul and Trask.[1] Abortive cases in

contacts are about ten times as frequent as are second cases of frank paralysis, and they probably form one of our chief sources of infection.

In addition to the common spinal type of paralysis other varieties are sometimes met with. In polioencephalitis we find an upper motor neuron lesion which produces a spastic paralysis, and when this is combined with spinal lesions we may encounter a mixture of spastic and flaccid paralyses. The cerebellum may be affected, producing nystagmus and ataxia; or the bulb, in which case death from respiratory failure is not uncommon. Landry's ascending paralysis has also been proved to be due to an infection with the virus of poliomyelitis.

Before proceeding to consider the further progress of the disease let us discuss the treatment of the acute stage, and first of all the use of serum obtained from convalescents. It has been proved experimentally that when immune serum and active virus are mixed in vitro and then injected into monkeys no disease is produced. If virus is injected intracerebrally and not later than twenty-four hours subsequently serum is administered either intraspinally or intravenously in sufficient quantity no disease follows, or at most a very modified attack after a prolonged incubation period.[2] If sufficient "convalescent serum" is administered, and the animal is inoculated with active virus a few days subsequently, again no disease will be produced. If, on the other hand, serum is administered after the onset of paralysis the disease follows its usual course and no benefit is demonstrable. It has also been discovered that a large proportion of the adult population becomes immunized to infection, and that the blood of such people contains bodies which are capable of conferring passive immunity on others.

During the last American epidemic attempts were made to immunize contact cases passively by injecting sera derived from adults. I believe that the results have been encouraging, though I have not been able to obtain any statistics in proof of this. All are agreed that when once paralysis has ensued serum treatment is useless, but opinions are by no means unanimous that it exercises any influence upon the course of the disease even when given in the preparalytic stage. Last year the New York Academy of Medicine expressed the view that the evidence both pro and con was still insufficient.[3] Dr. Jean Macnamara,[4] on the other hand, after studying the figures of cases treated with and without serum in Australia between the years 1925 and 1931 brings forward what appears to be conclusive evidence as to its value. It may be obtained free from the Lister Institute, and should undoubtedly be administered. In its absence it would be well worth while to give a mixed serum obtained from adults, preferably relatives.

It is usual to withdraw 20 to 30 cc. of cerebrospinal fluid, to have this rapidly examined, and if the result is positive to inject a similar amount of serum intrathecally through the same needle. Another 30 to 40 cc. should be given intravenously at the same time, and repeated if necessary next day.

If hypertonic saline is administered intravenously, it diminishes the tension of the cerebrospinal fluid, and lessens the œdema of the cord.

When given in conjunction with the serum it should, by reversing the direction of flow of the spinal fluid, bring the serum into more intimate contact with the virus which is present in the cord. Even by itself it most likely acts beneficially. Urotropine has been given in large doses as a

disinfectant of the cerebrospinal fluid, but it is of doubtful value.

During the acute stage there is little else to do beyond keeping the patient quiet and warm and making sure that all the paralysed muscles are maintained in a state of relaxation. This last is most important, for serious deformities may arise during the first few weeks. One should be particularly on guard to prevent footdrop; flexion of knee and hip, if the child is allowed to lie on one side or to sit up; and spinal curvature caused by weakness of the spinal or abdominal muscles. The error is not infrequently made of examining the limbs only, and forgetting all about the muscles of the trunk till gross deformity has taken place. The most generally useful form of splint is the Thomas's double abduction frame with footpieces, and if necessary with armpieces added or, if there is abdominal weakness, a canvas corset. Each case is an individual problem, which is what makes poliomyelitis such an interesting disease to treat.

It is only necessary to visualize the inflamed and hæmorrhagic spinal cord to realize how much harm can be done at this stage by misguided massage, electrical stimulation, or, in fact, any form of active treatment. Rest and an absence of stimuli is what the cord needs for its recovery, and this can best be ensured by complete rest of the body as a whole. The question naturally arises: "When can one start upon active measures?" The answer is: "Not while hyperæsthesia is present," or in the absence of that symptom: "Not for the first six to eight weeks." During this period regard the child as potentially infectious. Keep other children away as much as possible. Regard adults as possible carriers. It is probable that they should spray their noses with

some weak antiseptic, such as pot. permang., which is known to have a pronounced viricidal action. During an epidemic it may be necessary to close schools and to keep children away from cinemas, churches and other places of instruction or entertainment, but if an outbreak occurs in a boarding-school it is a mistake to close the school and send the children home to infect their brothers and sisters all over the country.

When the acute stage is over comes the period of convalescence, and this may be regarded as lasting for at least the next two or three years. This is perhaps the most important period, for during it so much good and so much harm may be done.

Let us consider the harm first.

Muscles which have been merely weakened may be completely paralysed either by fatigue or by stretching. Their unparalysed opponents exercise a constant pull if they are allowed to do so. In so doing they themselves will become shortened and less efficient. Paralysed muscles, then, must be kept continuously relaxed throughout this period if good results are to be obtained.

Now as to fatigue. It is generally good to let children get about, but in so doing they are very apt to throw undue strain upon weakened muscles, and they therefore require most careful supervision. A chart recording all the paralysed and weakened muscles should be kept and brought up to date at regular intervals. In this way only can one be certain whether progress is satisfactory and adapt one's treatment accordingly. Positive treatment consists mainly in splinting and in the careful training of weakened and paralysed muscles. Heat and massage are useful for promoting the circulation, but it is on active voluntary movement that one must chiefly rely. This promotes

the development of fresh paths by which impulses may pass down from the brain, and is the natural way in which one would expect muscular development to take place.

There are, however, numerous precautions to be taken.

Firstly, things must be made very easy for the feeble muscles.

The influence of gravity is eliminated by various devices, *e.g.* the patient may exercise in a warm bath; all movements may be carried out in a horizontal plane, as upon a slippery table or with the limb supported in a sling suspended from a gallows. The movement of a limb should be assisted at the beginning and end of its range, at which points most effort is required. At the slightest sign of fatigue the exercise must be stopped. In many cases it will be found that two or three sittings a week are more useful than are daily ones.

Our great objects throughout this period are to encourage function and to prevent deformity. Examinations of the patient should be frequent and thorough. The child should be stripped, so that one may at once detect any deformity and correct it while this can still be easily done. The gait, too, must be noticed and any abnormality carefully analysed to make certain of its origin.

After two or three years comes the time when one must realize that little more improvement can be expected except as the result of surgical measures. Every case is a problem to itself, as it is rare to find any two which are alike in the distribution and extent of their paralyses. Usually one has to make up one's mind whether the needs of the patient will best be met by the employment of apparatus alone, whether

operation will enable us to dispense with apparatus altogether, or whether a combination of the two will give the best functional result.

It would be foolish for me to attempt any account of the operative surgery of anterior poliomyelitis. Speaking broadly, we aim first at the correction of deformities by manipulations and plasters or by operations upon the soft parts or bones; secondly, at the stabilization of flail joints; and thirdly, at the transplantation of tendons in order to make a healthy muscle take the place of a weakened one. Fixation of joints, notably those of the foot, the knee, and the shoulder, sometimes yields the most brilliant results. Tendon transplantation has a more limited field, but in selected cases the results are very satisfactory, especially when combined with a fixation operation.

I have so far said nothing of the trophic changes which are a prominent feature of the disease. The growth of limbs is stunted. Hands and feet are cold and, in winter especially, covered in chilblains. Painful corns and ulcers are by no means uncommon. Long woollen garments and the avoidance of any constriction of the limbs, especially by tight boots or by the straps of apparatus, help matters. Sinusoidal baths given about twice weekly are excellent for keeping chilblains in check, but I believe that there is a great future in these cases for operations upon the sympathetic system. Leriche's operation, which consists in stripping off the sheaths of the large vessels of a limb, together with the sympathetic fibres which they contain, causes a temporary dilatation of the vessels distal to the site of operation, but the effect is only temporary. Removal of the lumbar sympathetic ganglia, on the other hand, causes a dilatation of the vessels of the extremity, which lasts, as I know from

personal experience, for several years, and which I believe to be permanent. In the case of the upper limb the same effect is produced by removal of the upper dorsal and lower sympathetic ganglia. It is quite likely that our chief surgical advances in the treatment of these cases will lie along these lines.

Lastly, I want to say a few words about after-care. Much of our work is wasted by lack of an efficient follow-up system. This is especially the case where families migrate, and I do feel that something should be done to see that every crippled child is transferred with its complete dossier to the nearest orthopædic centre whenever it moves from one district to another. A good deal is already being done to provide vocational training. It needs to be carried out on a large scale to be truly effective. I am glad to know that a scheme is on foot to found a centre for the whole of the West of England at Exeter. Where there are enough cases it is possible to supply a big range of different types of training, and also to find openings for the pupils when trained. At Exeter there is to be an employment bureau.

Employment is always the greatest difficulty. Even if a cripple does a job as well as a normal individual he seldom gets it in open competition. I believe that employers make a great mistake in this respect, for it has been shown over and over again that cripples stick to their jobs better than the healthy. Their work means so much more to them. It is the chief interest of their lives, since they are debarred from so much outside. I dare say, too, that they feel that a job once lost may never be replaced by another. In this mechanical age factory work can often be done perfectly well by one with a single arm, or who has two arms but no legs. At any rate, there must often be a

few such jobs in a factory. Henry Ford, a pioneer in this as in so many other ways, gives work of this type to the maimed, but he is the only employer, to the best of my knowledge, who does so.

In conclusion, although I cannot claim much originality for the subject-matter of this paper, I trust that it may serve to stimulate interest in a disease which may at any time become of very vital importance to the whole nation.

REFERENCES.

[1] Paul, J. R., and Trask, J. D., *Jour. Exper. Med.*, 1932, lvi. 319.

[2] Flexner, S., and Lewis, P. A., *Jour. Amer. Med. Assoc.*, 1910, liv. 1,780.

[3] Park, W. H., *Jour. Amer. Med. Assoc.*, 1932, xcix. 1,050.

[4] Macnamara, J., and Morgan, F. G., *Lancet*, 1932, i. 469.

Reviews of Books

The Early History of the Infant Welfare Movement. By G. F. McCleary, M.D., D.P.H. Pp. xii., 176. London: H. K. Lewis & Co. Ltd. Price 6s.—One of the direst results of the Industrial Revolution in England was an increasing indifference to the value of infant life. Some people look back with pride to the improvement which nineteenth-century legislation brought in the care of children; but many more must look back with contempt upon the conditions which rendered legislation necessary to restrict what we can only call the child destruction organized by the industrialists. For it is clear from Dr. McCleary's *Early History of the Infant Welfare Movement* that the individual exploiters of child labour were responsible rather than the system under which they made their fortunes. With the employers disregarding the welfare and health of children, it was not surprising that they bred a similar indifference in the parents, whom they equally exploited. Even the Prevention of Cruelty to Children Act only dates from 1889, and it is still impossible to prevent milk-vendors from distributing bovine tuberculosis where they please. To write temperately after reading Dr. McCleary's book is impossible. Although, as he shows, great progress has been made, there is little enough reason to be vain of our past achievements. In Great Britain we have just started looking after our babies: how difficult progress has been and against what difficulties the pioneers in every country have had to contend is made evident in this book. Nothing reflects greater discredit upon us as a nation than the discovery, from Dr. McCleary's book, that most of the medical leaders of the Infant Welfare Movement in England have received no public recognition of their labours. Unless, perhaps, the removal of Edwin Chadwick from the General Board of Health was a more striking tribute to his life work than his removers intended. The book is one of absorbing interest, which its author has made most attractively readable.

A Shorter Surgery. Third Edition. By R. J. McNeill Love, M.S. Pp. viii., 413. 96 illustrations. London: H. K. Lewis & Co. Ltd. 1932. Price 16s.—The medical student of the present day is expected to absorb and retain a vast amount of theoretical knowledge, often at the expense of his practical work. Any book which will help to curtail the total time

expended in reading, and so allow a little time for the clinical study and examination of cases, must be a welcome addition to medical literature for students. *A Shorter Surgery* supplies the need for a book of the type indicated, it is indeed so short that in parts the text consists of little more than a list of facts. The author has no time or space for the discussion of controversial matters, consequently it is essential that this small volume be read in conjunction with a more complete work, as stated in the preface. There are one or two serious omissions. The classifications are good, and should be of the greatest help to the reader in framing lucid answers to examination questions, and should also train him to arrange what he wishes to write in a concise though readable form. The illustrations are excellent, and take the form of line drawings and photographs, both of cases and of X-rays. Short books on long subjects must always be read with caution, but the fact that this is now in its third edition should dispel any doubts as to its usefulness, and is ample evidence that the author has efficiently accomplished a difficult task.

Common Skin Diseases. By A. C. ROXBURGH, M.D. Pp. xxx., 322. Illustrated. London: H. K. Lewis & Co. Ltd. 1932. Price 18s.—Dr. Roxburgh is to be congratulated on the production of this text-book, which should be of value to students and general practitioners. Although a large number of books on dermatology have already been published, this one has certain features which will especially commend it. The index of preliminary diagnosis, together with the chapter on signs, symptoms and general diagnosis, should enable students to determine the group to which any particular case belongs. Details of treatment which can be carried out in general practice are given, and the indications for those forms of treatment which require special apparatus and experience, *i.e.* X-rays, radium and electrical treatment, are fully described, but the details of technique are not given. The book is well produced and the illustrations are excellent. One can recommend this book with confidence.

The Elements of Medical Treatment. By ROBERT HUTCHISON, M.D., F.R.C.P. Second Edition. Pp. 188. Bristol: John Wright & Sons Ltd. 1932. Price 5s. net.—The second edition of Hutchison's *Elements of Medical Treatment* has been enlarged by the addition of chapters on Physiotherapy and Anthelmintics and by a new section on Sedatives. The chapters on Anæmia and on Diabetes have been considerably revised to keep abreast of progress. Dr. Hutchison might

improve his first chapter on "Some General Principles" by bringing his instructions for signing prescriptions into keeping with the intricacies of the Dangerous Drugs Act: there are some occasions when the mere initials of the doctor will not suffice. He is, in our opinion, unwise to make jest at the full formula for a drug like veramon, for he has no reason to suppose that a modern medical student will not appreciate the meaning of the formula; indeed, it is a pity that the formula is not quoted in many other examples of these synthetic drugs with proprietary names. It is surely by an oversight that Mist. Sennæ Co. appears under the "Anthracene Group" of aperients only, and that no mention is made of the "Saline" it contains. Some of the modern drugs for relieving cardiac and renal dropsy, like novasurol, salyrgan and neptal, might well have been mentioned in this revision, and the omission of mercurochrome from the urinary antiseptics is most striking. In the chapter on hæmorrhage the value of intramuscular and intravenous injection of citrates is ignored. The instructions for treating diabetes lay too much stress on diet ("the main line of attack is by diet") and too little on the use of insulin in enabling the patient to take a normal diet. The author says, "Diabetic foods are less necessary now," but he continues to advocate a group of expensive "foods" which have the additional demerit of being unappetising. The dangers of an excess of fat are not referred to. But the bad old practice of fast-days is apparently not even now wholly condemned by the author. The book is not one which can be recommended as likely to guide the student and newly-qualified practitioner to the most modern advances in treatment, and may even prove misleading in the application of some old and established plans.

Obstetrics and Gynæcology. By JOSEPH B. DE LEE, M.D., and J. P. GREENHILL, M.D., F.A.C.S. Pp. 665. Illustrated. Chicago: The Year Book Publishers. 1931.—This is one of the Practical Medical Series for 1931, and consists of préces by the authors of all the latest work in connection with the two subjects of gynæcology and obstetrics. The work and views of American authors form at least three-quarters of the matter reviewed, and a large proportion of this is typical of the "meddlesome midwifery" of that country. Such, indeed, is the view expressed on several occasions by the authors. In spite of this drawback, there is reviewed a sufficient proportion of excellent experimental work to make the book well worth reading by those who specialize in these subjects.

The Breast-fed Baby in General Practice. By LESLIE GEORGE HOUSDEN, M.B. Pp. ix., 118. London: H. K. Lewis & Co. Ltd. 1932. Price 4s. 6d.—This book contains the "Studies in Breast Feeding" awarded the Sir Charles Hastings Clinical Prize, 1932, by the British Medical Association. It is a most useful and helpful book, and the subject is vital to the interests of the child, and often to the reputation of the practitioner. The case for breast feeding is presented in a simple, convincing, and stimulating fashion, and should be of great assistance in enabling the doctor to institute natural feeding in those cases where indifference or resistance is shown by the patient, nurse or relatives. Breast feeding is often abandoned for artificial methods because of the various difficulties and anxieties which may occur during the early months, and many practical points are discussed. The chapters on maternal diet and the feeding of premature infants, twins, and triplets are also of great value.

The Infant. By W. J. PEARSON, D.M., and A. G. WATKINS, M.D. Pp. vii., 47. London: H. K. Lewis & Co. Ltd. 1932. Price 2s. 6d. This book presents a brief epitome of the essential points to be observed in the feeding and management of infants. The food-value tables and caloric requirements will prove particularly useful, so too will the "landmarks" in child development. The book lacks an index, and we have failed to find any reference to the protein requirements of infants or the best forms of protein foods. On the whole, however, those infant welfare workers (lay and medical) for whom it is intended will find it a reliable reference hand-book, so too will any doctor who has to give advice on the management of infants.

Injection Treatment in Medical Practice. By DAVID LEVI, M.S. Pp. vii., 150. Illustrated. London: Cassell & Co. Ltd. 1932. Price 6s.—One might not have thought that "injection treatment" could form the sole subject of a book. But Dr. Levi has collected a surprising number of remedies which are administered by this method. His little volume fully justifies the undertaking. Piles, varicose veins, local anæsthesia in fractures, neuralgias, delivery of retained placenta and blood transfusion are some of the conditions whose treatment by means of injections are described. His technique is sound and his descriptions are clear. This is likely to prove a most valuable guide in general practice.

The Francis Treatment of Asthma. By A. FRANCIS, M.B. Pp. viii., 160. London: William Heinemann Ltd. 1932. Price 7s. 6d.—The Francis treatment of asthma consists in light cauterization of the nasal septum. The lightest possible touch is required, such as produces neither swelling nor irritation. By such cauterization our author can at will raise or lower the blood-pressure. Asthma is due to instability of the vasomotor system. (And since "vasomotor disturbance is the cause of most ailments," the same treatment will cure migraine, angina pectoris, mucous colitis and Raynaud's disease.) The author utters a special warning against removing nasal polypi in asthmatic subjects, above all in those persons who cannot take aspirin. More than half the book is occupied by reprints of papers previously published by the author (or submitted for publication but rejected) and by reports of 400 treated cases. Those who are interested in the subject of asthma will probably find it worth reading, and will be able to assess the value of the evidence.

Practical Food Inspection. Vol. I. By C. R. A. MARTIN. Pp. vii., 312. Illustrated. London: H. K. Lewis & Co. Ltd. 1932. Price 15s.—Too often books on such matters as food inspection are written by men with little practical experience of the administrative difficulties associated with the duties. If for no other reason, this book, by an inspector of many years' experience, is a valuable contribution to the literature upon the subject. The book is well arranged in chapters, and deals with the subject from physiology and anatomy to ante-mortem inspection, the actual slaughtering, meat inspection and pathological conditions, including infectious and parasitic diseases. A chapter at the end deals with the preservation of meat. There is an excellent glossary of the more uncommon terms and an index at the end of the book. The book will be most valuable to any Health Department, and students who desire a clear conception of the subject of meat inspection cannot do better than study it.

Massage and Remedial Exercises. By NOËL M. TIDY. Pp. xii., 429. Illustrated. Bristol: John Wright & Sons Ltd. 1932. Price 15s.—This is in many respects an admirable book, as it is arranged most methodically, is most generously and efficiently illustrated, and includes the most modern ideas and methods in a large number of branches. On the other hand, it seems likely to prove wearisome to the careful student,

because it crowds an enormous material into relatively few pages by means of a small type. If the candidate for the C.S.M.M.G. diploma is really expected to be familiar with the details of pathology which are included in this book, one can only deplore the attitude of the examiners who demand knowledge of so little practical use to a masseuse. One looks in vain in this book for the illuminating comment of the experienced practitioner guiding the novice among the maze of exercises and tests, which are doubtless necessary to the examination candidate, but demand pruning and selection in real life. There is a good index.

General Nursing. By ALAN PERRY, F.R.C.S., and DOROTHY HARVEY. Pp. viii., 408. Illustrated. London: Edward Arnold & Co. 1932.—This small book is intended to cover the syllabus of the State examination for nurses, and it is written on the assumption that its readers are undergoing a practical course of instruction. Certainly the amount of information contained in the book is very remarkable, and it is conveyed in such a way as to be both clear and interesting. The illustrations are clear and well drawn, and we feel sure that the book will be a most welcome friend and help to the nurse in her first year of work. It will probably also serve a useful purpose in giving an idea of elementary anatomy, physiology, surgery, and medicine to school teachers.

Materia Medica for Nurses. Second Edition. By A. MUIR CRAWFORD, M.D. Pp. viii., 89. London: H. K. Lewis & Co. Ltd. 1933. Price 3s. 6d.—Professor Crawford has brought out a second edition of his useful book on materia medica for nurses so as to bring it into accordance with the last edition of the British Pharmacopœia. Medical students as well as nurses will find it worth their while to read this admirable and practical summary of drugs and doses. It has the great merit of mentioning only the really important preparations which are in constant use.

Editorial Notes

Dr. Symonds and Cholera in Bristol.

A MANUSCRIPT volume has recently been presented to the University Medical Library by Dr. A. G. Gibson of Oxford, who stated that it was given to him by the late Horatio Symonds, a well-known practitioner in Oxford and nephew of our Dr. Addington Symonds of the General Hospital. Dr. G. Parker, our Honorary Medical Librarian, has examined the manuscript, and makes the following comments upon it:—

The greater part of the book is taken up with case histories from 1832 to 1836 of patients, most of them living in Bristol, *e.g.* W. Burke, staying at the Rummer Hotel after crossing from Dublin, August 1835. At one end there is a "Monthly confidential return of cholera cases in District No. 3 West of the City and County of Bristol." As a matter of fact, this "Monthly" return is continued on and on from 19th August to 6th November, and includes 107 cases in the Lewins Mead district.

After looking over the clinical notes one comes to the conclusion that, though the writing differs very much in places, it is all by the same hand that signs a loose prescription for Lydia Hurley, one of the cases. The signature is undoubtedly by John Addington Symonds, and this explains the presence of an official return of cholera cases. Symonds had not long been in Bristol when the great cholera outbreak of 1832 took place. He was made one of the Commissioners of Health in July, and became Hon. Secretary to the Board a month or so later, and he signs henceforward the monthly returns for the whole city. Some of these returns with his signature can still be seen in Richard Smith's M.S. Collections at the Bristol Royal Infirmary, vol. 1828-36. The return we have

here has names, previous health, etc., of all patients in a district, evidently not for publication, but the basis on which the returns for the whole city were made out and sanitary measures devised.

J. A. Symonds also wrote an able history of this epidemic and published it three years later in the *Transactions of the Provincial Medical and Surgical Association*, vol. iii., p. 170. There he tells us that the main outbreak began on July 11th, with a case in Harford's Court on the bank of the Frome, to be followed by others in the prison on the New Cut, Redcliffe, the Temple and St. Augustine's. St. Philip's and Bedminster were also severely visited, and worst of all, the over-crowded poor-house, St. Peter's Hospital, in which 208 cases occurred. The total cases reported amounted to 1,612, and the deaths to 626. He discusses the possible means by which infection could be transmitted, but curiously enough omits the possibility of water carriage. He found the mortality the same in both sexes, and greatest above the age of fifty. It is curious that while not a single doctor was attacked, almost every nurse and stretcher-bearer went down with it. This epidemic was twice as large as the one in 1849, in which the heroic work of Gage Parsons and Williams took place, as recorded on their monuments in Arno's Vale.

One is apt to think of Symonds only as a very successful and fashionable consultant, with marked literary and classical tastes, but this note-book shows him, four or five years after qualification, working hard at the clinical and sanitary studies which were the basis of his mental equipment.

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Burden Mental Research Trust.

In January last Mrs. R. G. Burden, Warden of the National Institutions for Persons Requiring Care and Control, announced through the medium of the Council of the British Medical Association her offer of the sum of £10,000 for the encouragement and prosecution of research into mental problems and disorders.

An Advisory Committee has been formed consisting of the following members: Professor R. J. A. Berry, Director of Medical Services, Stoke Park Colony

(Chairman), Mrs. R. G. Burden, Professor E. D. Adrian, Sir Henry Brackenbury, Miss Ruth Darwin, Miss E. M. Elderton, Dr. R. A. Fisher, Miss Evelyn Fox, Dr. E. O. Lewis, Dr. W. Rees Thomas, Mr. L. G. Brock and Dr. G. C. Anderson (Honorary Secretary and Treasurer).

It will be seen that this Committee is thoroughly representative of national, medical and scientific interests; its meetings will be held in London at the House of the British Medical Association, whilst the headquarters of the research will be the laboratories at Stoke Park.

The Committee visualizes a five years' organized period of research, and has already invited applications for the position of Principal Investigator, with whom, after appointment, the Committee will discuss and formulate its further plans. Other appointments, including those of Social workers, will be advertised and made later.

Whilst the exact scope of the research remains to be defined there is no doubt of its urgency, and the munificent gift of Mrs. Burden will be gratefully acknowledged far and wide, but nowhere with greater appreciation than in Bristol, where the scientific headquarters of the research are to be placed.

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Death of Sir Percy Sargent.

A VERY loyal Bristolian and a most eminent neurological surgeon has passed away in Sir Percy Sargent. He was born in Pembroke Road and educated at Clifton College. His medical studies were conducted at Cambridge and St. Thomas's Hospital, where he became Senior Surgeon. At the time of his death he was a member

of the Council of Clifton College and represented the Royal College of Surgeons on the Court of Bristol University. His wife was a daughter of the late Sir Herbert Ashman and had predeceased him by a few months. Sir Percy Sargent was a keen Freemason and rose to high distinction in the craft.

Sargent was a man of whom Bristol may well be as proud as he was proud of his birth-place. Quiet, courteous and capable, he held his place in the estimation of his friends, his patients and his colleagues by affection even more than by his outstanding talents.

Obituary

WILLIAM HENRY HARSANT, F.R.C.S.

W. H. HARSANT, who died on 10th February, at his Clifton residence, in his eighty-third year, was born at Epsom, and educated at the City of London School. Entering Guy's Hospital, he qualified as L.S.A. in 1873, the year following he took the M.R.C.S., and was appointed House Surgeon and afterwards Resident Obstetric Officer at Guy's. Leaving London, he was appointed House Surgeon at the Bristol General Hospital, and in 1877 acquired the F.R.C.S. (England).

In 1879 Harsant was appointed Assistant Surgeon on the honorary staff of the Bristol Royal Infirmary, and in the same year initiated a new special department for Diseases of the Ear. He became full Surgeon to the Infirmary in 1885, and resigning in 1902, was appointed Honorary Consulting Surgeon to this institution, which owed him a great debt of gratitude for his twenty-three years of assiduous and painstaking work.

Meanwhile, however, Harsant had made a number of interesting contributions to surgical literature, a bibliography being appended.

He was Lecturer on Anatomy at the Bristol Medical School from 1887, when it was associated with the University College,

W. H. HARSANT.

occupying this important office for six years; his lectures and demonstrations were greatly appreciated by his students. A life-long member of the Bristol Medico-Chirurgical Society, he was on the Journal Committee for several years, taking an active share in the editorial work, and in 1899 was elected to the Presidency of the Society. Although not a prolific writer, Harsant published a number of original contributions on general surgery: he was always most helpful and encouraging to junior colleagues, and in 1894 collaborated with the writer in grafting sheeps' pancreas in a diabetic case with a view to supplying a source of "islet secretion."

An accidental infection of his right hand caused him to lose the index finger. Thenceforth he abandoned his surgical practice, and restricted himself to general practice in Clifton, where he was for many years one of the most respected family advisers. With a peculiarly attractive charm of manner, never failing in quiet courtesy to everyone, the poorest patients and his equals alike, and an innate kindliness and sympathy, he was a man of many friends, beloved by all his patients and warmly esteemed by his fellow-practitioners, and of the many generations of his students.

He married Miss Evans, of Clifton, who predeceased him; and had two daughters, only one of whom survives him.

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4. "Suppuration in the Antrum Cured by Free Drainage," *Bristol Med.-Chir. Jour.*, 1883, i. 93–95.

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6. "A Case of Suppurating Middle Ear; Thrombosis and Phlebitis of Lateral Sinus; Death," *Bristol Med.-Chir. Jour.*, 1887, v. 37–42.

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9. "Three Cases of Actinomycosis," with G. Smith and J. P. Bush, *The Lancet*, 1897, i. 311.

10. "Cases of Acute Intestinal Obstruction Treated by Operation," *Bristol Med.-Chir. Jour.*, 1900, xviii. 118–122.

CHRISTOPHER ELLIOTT, M.D.

OF late years Dr. Christopher Elliott, who passed away on the 14th of February, would have been known only to a few Bristol practitioners. He had been out of active practice for a good many years, and was greatly handicapped by deafness. Not long ago he showed grave symptoms of heart weakness, and it looked as if his days were numbered, but he pulled through, got about actively, and outlived his medical adviser.

For many years he was Physician to the Children's Hospital, and he carried on an extensive practice in Pembroke Road, Clifton. But it is doubtful if medicine was ever his main interest in life; certainly not in his later years. He was widely read, and liked to talk of things far beyond the bounds of his profession. But his heart was principally set upon religious and philanthropic work. He did a good deal of preaching in various places of worship in the town. He was Chairman of Trustees of the Orphanage on Ashley Down founded nearly a hundred years ago by George Müller. For forty-seven years he was Treasurer of the Bristol Institute and Mission for the Deaf and Dumb, and not the least impressive of the funeral tributes paid to his memory was by a very large congregation of deaf-mutes at 4 King Square, conducted in sign language.

The medical profession finds room within its ranks for men of many types, and it is well that it is so.

SIDNEY JOHN HERMANN GRIFFITHS, M.B., Ch.B., L.R.C.P., F.R.C.S.

IT is with the most profound regret that we have to record the death of Mr. S. J. H. Griffiths. In the course of a full and vigorous activity he developed a septicæmia which was rapidly fatal on 25th February, 1933, after a short and trying illness endured by him with his usual courage and tenacity.

John Griffiths's surgical career, cut short as it was so soon, achieved an amazing success. The son of Mr. and Mrs. E. S. Griffiths, of Fairlawn, Portishead, he was born in Bristol on 21st July, 1898, and received his early education at St. Mary Redcliff School and privately. At the close of the War he entered on a medical course at Bristol University, taking his M.B., Ch.B., Bristol, in 1925, and winning the Committees'

Silver Medal for 1924–25. Then followed a postgraduate course at London University and London Hospital and Guy's Hospital, when he took his Fellowship. After a period as Senior Resident Officer at the Bristol General Hospital he became in 1929 a very welcome member of the Honorary Staff, and at once gained the complete confidence of his colleagues. Following this he was appointed to the Honorary Staffs of the Children's Hospital, the Homœopathic Hospital and the Winford Orthopædic Hospital. His ability as a surgeon both in the realms of orthopædics and of the thyroid gland was becoming widely recognized, and he carried on too with great energy a busy surgical consulting practice in Bristol. He was attended with loving regard by his house surgeons and students, who without exception unhesitatingly sought and much valued his friendly advice in matters of their career.

His intimate friends saw in Griffiths a very charming personality, a man of high principles with the gift of grasping the essentials of a problem and giving willingly straightforward advice on personal matters about which his opinion might be asked. A versatile and gifted raconteur, he would relate his experiences in realistic and humorous vein to the great entertainment of his listeners. He will be remembered with the sincerest affection. His life was a full one. Busy as he was, he took care never to let the private side of his practice usurp the time which he felt he should give in the interests of his patients at the various hospitals to which he was attached. His living, indeed his life's work, was based on his care for the welfare of others, and the comfort of his patients was always uppermost in his mind.

His death during the course of his rapid ascent is truly a tragic one. It leaves his friends with a sense of great personal loss, his colleagues with a gap most difficult to fill. Bristol and the West of England must lament a surgeon whose ambition was to confer upon the community widespread benefit and relief in the specialities which he practised.

MRS. EVELYN RACHEL BATES, M.R.C.S., L.R.C.P.

ANOTHER younger member of the Society passed away, deeply mourned, on 18th February. Mrs. Bates was the younger daughter of the late Lionel Edward Pyke, Q.C., of Kensington. Educated at Priorsfield School, Miss Pyke went up to Newnham

College, Cambridge, in 1916, where she read for the Natural Sciences Tripos and the M.B. examinations. At school she had been an excellent lacrosse player, and she played continuously for Cambridge while she was up. She was captain of the Cambridge team during her last year and led them to victory against Oxford. Shortly before the Tripos she developed appendicitis, and in consequence of this interruption of residence did not keep the terms necessary for a Cambridge degree. A Cambridge contemporary writes of her : " I always thought her a person of quite remarkable courage and capacity for clear thought. One always learnt from her, too, which were the books, the plays and the music worth attending to," for Mrs. Bates was a more than average violinist and played in orchestras at Cambridge and in London.

On leaving Cambridge she continued her medical studies at the London Hospital, and took the double qualification M.R.C.S., L.R.C.P., in 1924. She then worked for two years as a Research Assistant in the Medical Unit at the London Hospital under Professor Ellis. " The problems on which she was engaged," he says in a letter, " were the significance of the occurrence of yeasts of the Monilia type in the mouth and intestinal tract of patients with pernicious anæmia and, secondly, an attempt to determine if the Dick reaction was affected in patients with acute nephritis. The results of these investigations were never published, but were of very considerable interest." After leaving the Medical Unit Laboratory in 1926 Miss Pyke was Pathological Assistant in the Bernhard Baron Institute of Pathology, and also worked in the Hale Clinical Laboratory.

In February, 1929, she married Mr. R. M. Bates, F.R.C.S., and accompanied him to Bristol on his appointment as Resident Medical Officer at Stoke Park Colony. At the time of his appointment it was not known that Mrs. Bates had a medical qualification, but shortly after her arrival her laboratory experience and pathological knowledge were so constantly in demand that she was appointed Clinical Pathologist to the Colony. Her death from pneumococcal meningitis following influenza came as a great shock to her friends and colleagues. Although Mrs. Bates had only recently come to Bristol, she had impressed everyone who met her by her delightful personality and many-sided ability.

Meetings of Societies

Bristol Medico-Chirurgical Society

The fourth meeting of the session was held in the Physiological Lecture Theatre of the University, on Wednesday, 11th January, 1933, at 8.30 p.m., Mr. E. W. HEY GROVES in the Chair.

X-rays were shown by Dr. F. J. MAYES and pathological specimens by Dr. A. L. TAYLOR.

Dr. A. T. TODD showed two cases of **pseudo-hypertrophic paralysis treated by sodium fluoride.** A discussion followed these cases.

Mr. ANGELL JAMES and Dr. A. T. TODD read a paper on **"The Treatment of Asthma."**

A discussion followed in which the President, Dr. Symes, Dr. Carleton, Dr. Perry, Dr. Gee, Mr. Wright, Dr. Birrell, Dr. Frank Bodman, Dr. Hector, and Professor Nixon spoke.

The fifth meeting of the session was held in the Physiological Lecture Theatre of the University, on Wednesday, 8th February, 1933, at 8.30 p.m., Mr. E. W. HEY GROVES in the Chair.

Dr. A. D. FRASER and Dr. T. B. WANSBROUGH showed pathological specimens and X-rays.

The minutes of the previous meeting were read and confirmed.

The President introduced Mr. ROCK CARLING, who gave an address entitled **"Surgery for Pain."**

Mr. C. FERRIER WALTERS proposed a vote of thanks to Mr. Rock Carling, which was seconded by Mr. CLIFFORD MOORE, and carried with acclamation.

Mr. ROCK CARLING replied.

The Medical Library of the University of Bristol,

WITH WHICH IS INCORPORATED

The Library of the Bristol Medico-Chirurgical Society.

The following donations have been received since the publication of the list in November, 1932.

February, 1933.

Association of American Physicians (1) ..	1 volume.
W. S. Bainbridge, Esq. (2)	1 ,,
Brompton Hospital (3)	1 ,,
Carnegie Institution of Washington (4) ..	1 ,,
Dr. A. C. Fryer (5)	1 ,,
General Medical Council (6)	2 volumes.
V. B. Green-Armytage, Esq. (7)	1 volume.
Dr. G. Hadfield (8)	1 ,,
Imperial Cancer Research Fund (9)	1 ,,
Dr. A. Lumière (10)	2 volumes.
Dr. J. E. R. McDonagh (11)	1 volume.
J. E. MacKenty, Esq. (12)	1 ,,
Michell Clarke Fund (13)	46 volumes.
Dr. M. Nierenstein (14)	2 ,,
Rockefeller Foundation (15)	3 ,,
Smithsonian Institution (16)	2 ,,
Surgeon-General of the United States Army (17)	1 volume.
Université de Liége (18)	3 volumes.

Unbound periodicals have also been received from Professor E. W. Hey Groves.

THE ONE HUNDRED AND FORTY-THIRD LIST OF BOOKS.

The figures in round brackets refer to the figures after the names of the donors. The books to which no such figures are attached have either been bought from the Library Fund or received through the *Journal*.

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Publications Received

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A Doctor to a Mother. By Eardley Holland, R. C. Jewsbury and W. Sheldon. Price 1s. 6d.

From Ash & Co. Ltd.:

Influenza. By T. B. Layton, D.S.O., M.S. (Lond.). Price 1s.

From John Bale, Sons and Danielson Ltd.:

A Short History of Surgery. By Sir D'Arcy Power, K.B.E., F.R.C.S. Price 3s. 6d.

From Cassell and Company, Ltd.:

Injection Treatment in Medical Practice. By David Levi, M.B., M.S. Price 6s.

From William Heinemann (Medical Books) Ltd.:

Diseases of the Eye. By A. Rugg-Gunn, M.B. Price 12s. 6d.

From H. K. Lewis & Co. Ltd.:

Bacteriophage in the Treatment and Prevention of Cholera. By J. Morison, C.I.E., M.B., D.P.H. Price 9s.

Chronic Rheumatism and the Pre-rheumatic State. By J. H. Hindley-Smith, M.A., M.R.C.S., L.R.C.P. Price 5s. 6d.

Materia Medica for Nurses. By A. Muir Crawford. 2nd Edition. Price 3s. 6d.

The Early History of the Infant Welfare Movement. By G. F. McCleary, M.D., D.P.H. Price 6s.

From Macmillan & Co. Ltd.:

Diseases of the Heart. By Sir Thomas Lewis, C.B.E., F.R.S. Price 12s. 6d.

From Oxford University Press:

Human Values in Psychological Medicine. By C. P. Blacker, M.C., M.A., M.D. Price 8s. 6d.

From Radiological Review Publishing Co.:

Radiologic Maxims. By Harold Swanberg, B.Sc., M.D. Price $1.50.

From John Wright & Sons Ltd.:

The British Journal of Surgery. January, 1933. Price 12s. 6d.

Local Medical Notes

Paul Bush Gold Medal.—This medal has been awarded to Mr. A. A. G. Flemming, M.R.C.S., L.R.C.P.

APPOINTMENTS.

Brevet-Colonel H. E. Stanger-Leathes, I.M.S. (who was a resident officer at the Royal Infirmary in 1902), to be Honorary Surgeon to H.M. the King.

Professor V. B. Green-Armytage, I.M.S., to be Gynæcologist to the West London Hospital in succession to the late Sir Henry Simson.

J. E. Newton, M.B., Ch.B. (Bristol), to be non-resident Casualty Officer at the West London Hospital.

Bristol Royal Infirmary.—Consulting Physician: J. R. Charles, M.A., M.D., F.R.C.P.

Bristol General Hospital.—Consulting Physician to the Skin Department: W. Kenneth Wills, O.B.E., M.A., M.B., B.C. Physician to the Skin Department: Norman F. C. Burgess, M.D. Physician: Hugh H. Carleton, M.A., M.D., B.Ch. Assistant Physician: Charles B. Perry, M.B., Ch.B.

EXAMINATION RESULTS.

University of London.—M.D.—H. J. D. Smythe, M.S.

University of Bristol.—Students of the University have recently passed the following examinations:—

M.B., Ch.B. (*Part I.*).—*Second Examination. Pass: In Organic Chemistry:* E. M. Barber, Marjorie R. A Batten, A. N. Brimelow, Kathleen E. Byrt, Margaret H. Davies, Daphne V. Dennis, J. P. M. Forde, H. D. T. Gawn, M. E. M. Herford, F. J. W. Hooper, C. R. G. Howard, C. B. Jones, Jane Mackintosh, G. L. Page, A. N. H. Peach, P. B. Ryan, Margaret E. M. Slater, R. J. K. Tallack, M. W. N. Tribe, T. R. de V. Vallentin, Ernest Want.

M.B., CH.B. (*Part II.*).—*Second Examination. Pass:* R. D. Cæsar, Monica L. Hawkins, J. S. W. Little (with distinction in Anatomy), N. R. Matheson, Coralie W. Rendle-Short, E. L. Ward.

B.D.S.—*Second Examination. Pass: In Dental Anatomy only:* C. A. Blanden.

L.D.S.—*First Professional Examination. Pass: In Dental Anatomy (Completing Examination):* B. E. ffrench, D. E. Royal. *In Anatomy and Physiology only:* R. E. Buchan. *In Dental Anatomy only:* J. G. Coates, R. A. Hilton, T. John, C. L. Read, A. J. Staple.

Conjoint Board.—M.R.C.S., L.R.C.P.—*Pass: In Physics and Elementary Biology:* P. W. J. Parkes. *In Elementary Biology:* M. Thompson. *In Materia Medica and Pharmacology:* F. L. Wollaston, G. M. Denning. *In Anatomy and Physiology:* G. W. Vowles. *In Medicine:* J. F. H. Eagles.* *In Pathology:* Edith K. Harris, Aldyth D. Jones, Violet Fry. *In Midwifery:* A. J. Board, S. B. Adams, Mary G. Thomas, G. L. Foss, R. H. Moodie, T. R. Aubrey, Gladys R. Llewelyn, A. V. House. *In Surgery:* E. O. Walker. *In Elementary Biology:* T. John.

L.D.S., R.C.S.—*First Professional Examination. Pass: Part I. (Dental Mechanics):* J. W. E. Snawdon, G. L. R. Welch. *Part III. (b) (Dental Anatomy-Physiology):* T. H. Williams.

L.D.S., R.C.S.—*Final Examination. Pass: Part I.:* B. H. W. Baker, A. C. Davies, D. Gent, N. G. Harrison, N. E. Miles, J. D. Rees, H. F. Vere. *Part II.:* Margaret D. Hooper.

* Qualified.

NATIONAL HEALTH INSURANCE ACTS LECTURES.

UNIVERSITY OF BRISTOL.

Arrangements have been made in conjunction with the British Medical Association for Dr. Jonas, of Barnstaple, to give two lectures on the National Health Insurance Acts on Thursdays, 27th April and 4th May, at 3 p.m., in the Anatomical Lecture Theatre of the University.

These lectures are designed primarily for final year medical students, but any medical practitioners who are interested are invited to attend.

As we go to press we learn with deep regret of the death of Dr. D. S. Davies. An Obituary notice will appear in the Summer issue.

Bristol Medico-Chirurgical Society.

President.

E. W. HEY GROVES, M.S., F.R.C.S., B.Sc. Lond.

President-Elect.

H. ELWIN HARRIS, B.A., M.B. Cantab., F.R.C.S.

Committee.

Ex-Officio
- J. A. NIXON, *C.M.G.*, B.A., M.D. Cantab., F.R.C.P. (Editor of *Journal*).
- G. PARKER, M.A., M.D. Cantab. (Hon. Librarian).

Elected.

W. K WILLS, *O.B.E.*, M.A., M.B., B.Ch. Cantab. (Ex-President).
DUNCAN WOOD, F.R.C.S.
H. CHITTY, M.S. Lond., F.R.C.S.
A. R. SHORT, B.Sc., M.D. Lond., F.R.C.S.
H. G. KYLE, M.A., M.D., B.Ch. Oxon.
W. P. KENNEDY, M.D. Dub.
W. A. JACKMAN, M.B., F.R.C.S. Ed.
H. ELWIN HARRIS, Jun., M.A., M.B. Cantab., F.R.C.S.
A. L. FLEMMING, M.B., Ch.B. Bristol.

Honorary Secretary.

H. L. SHEPHERD, M.B., Ch.M. Brist.

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A. E. ILES, *O.B.E.*, M.B., B.S. Lond., F.R.C.S.

University Library Sub-Committee.

G. PARKER, M.A., M.D. Cantab.
A. R. SHORT, B.Sc., M.D., B.S. Lond., F.R.C.S.
J. O. SYMES, M.D. Lond.

Medical Practitioners wishing to join the Society are requested to communicate with the Hon. Secretary, Mr. H. L. SHEPHERD, 23 Pembroke Road, Clifton. The Annual Subscription is £1 11s. 6d., payable to Hon. Treasurer.

Extracts from Journal By-laws.

4.—The *Journal* shall be delivered free to Subscribers and also to Members of the Society whose subscriptions are not in arrear.

6.—The Annual Subscription to the *Journal* is 10/6, payable to Hon. Treasurer.

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